

RESEARCH ARTICLE / ARASTIRMA MAKALESİ

**VASCULAR PLANT DIVERSITY AND GENERAL ECOLOGICAL CHARACTERISTICS
OF AHI MOUNTAIN (Bilecik, Turkey)**

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ABSTRACT

In this study, plant diversity and ecological characteristics of Ahi Mountain (Bilecik, Turkey) and its environment were investigated. The study area lies in the A2 and B2 squares based on the Grid System of Davis. Altitudes of the area vary between 400 and 1000 m. During the study, 287 genera belonging to 75 families and 461 plant taxa were determined. Euro-Siberian elements were dominant (14.1%) in the study area and it was followed by Mediterranean (9.8%) and Irano-Turanian elements (5.0%). 5.4% of total plant diversity were endemic. Hemicryptophytes had the most number of plant taxa with 41.2% and vascular parasites had the less number of plant taxa with 0.4% in the research area. According to the IUCN Red List Categories, 24 threatened plant species were identified in the study area. Twenty two of them were in LC and 2 were in NT categories. Besides, plant associations belonging to *Quercus-Fagetea* (Br.-Bl. Evlieger) Fuk & Fab. 1968 and *Quercetea pubescentis* Oberd. 1948 classis were dominant in the research area.

Keywords: Conservation, Ecology, Flora, Phytogeography, Plant diversity, Vegetation.

**AHI DAĞI'NIN (Bilecik, Türkiye) VASKÜLER BİTKİ ÇEŞİTLİLİĞİ VE
GENEL EKOLOJİK ÖZELLİKLERİ**

ÖZ

Bu çalışmada, Ahi Dağı (Bilecik, Türkiye) ve çevresinin bitki çeşitliliği ve ekolojik özellikleri araştırılmıştır. Çalışma alanı Davis'in (1965) Grid sistemine göre A2 ve B2 karelerinde yer almaktadır. Alanın yüksekliği 400-1000 m arasında değişmektedir. Araştırma alanında, 75 familya ve 287 cinse ait 461 tür ve türaltı takson belirlenmiştir. Avrupa-Sibirya elementleri (% 14.1) alanda dominant olup, bunu Akdeniz (% 9,8) ve İran-Turan elementleri (% 5,0) takip etmektedir. Toplam bitki çeşitliliğinin % 5.4'ü endemiktir. Alanda hemikriptofitler % 41,2 ile en fazla takson içerirken, vasküler parazitler de % 0,4 ile en az oranda taksonu içermektedir. IUCN kategorilerine göre, 24 bitki taksonu risk altında bulunmaktadır. Risk altındaki taksonların 22'si LC ve 2'si NT kategorisinde bulunmaktadır. Ayrıca, alanda *Quercus-Fagetea* (Br.-Bl. Evlieger) Fuk & Fab. 1968 and *Quercetea pubescentis* Oberd. 1948 sınıfına ait taksonlar baskındır.

Anahtar Kelimeler: Koruma, Ekoloji, Flora, Fitocoğrafya, Bitki çeşitliliği, Vejetasyon.

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1. INTRODUCTION

Ahi Mountain is located at the border of Bilecik and Bursa and large part of the study area is in Bilecik province. The research area covers Pazaryeri county and Çamyayla, Karaköy, Günyurdu, Büyükelmalı, Kınık, Gümüşdere, Küçükkelmalı, Güde, Bahçesultan and Nazıfpaşa villages of Pazaryeri, Hamitabat and Kurşunlu villages of İnegöl county (Bursa) and their environs (Figure 1).

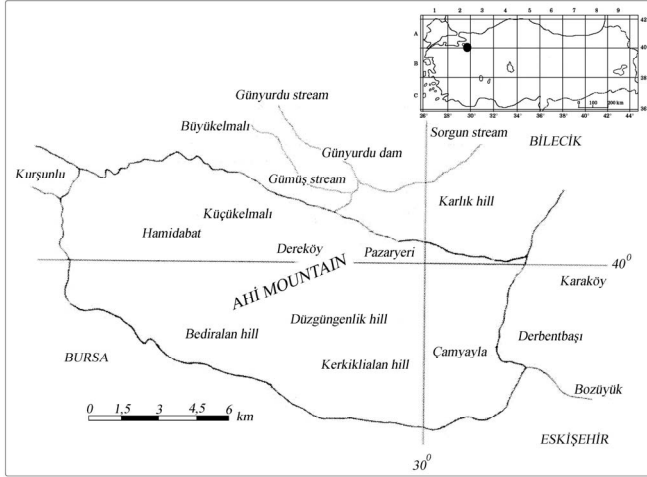


Figure 1. Location of the study area.

Geographically, it is between $30^{\circ} 53' - 40^{\circ} 04'$ north latitudes and $29^{\circ} 38' - 30^{\circ} 00'$ east longitudes. Altitudes of the research area change from 400 m (Kurşunlu village) to 1000 m (Bahçesultan village). Ahi mountain, located at the intersection of Euro-Siberian, Mediterranean and Irano-Turanian phytogeographical regions and of extension part of Uludağ and Sündiken Mountains.

There are some studies around the study area, floristic structure of Yırca and Muratdere forest series on the south of the region (Türe and Tokur, 2000), vegetation mosaic (Türe, 2001; Türe et al., 2005) on the north of the area, the flora of Gülümbe Mountain (Ocak and Tokur, 2000) and weed diversity of some agricultural areas in Bilecik (Türe and Bökük, 2000).

The study area consists of brown forest, colluvial and alluvial soils (Anonymous, 1983). Geologically, major soil structures are Paleozoic Bozüyük metamorphites and Mesozoic Bilecik limestone (Atalay, 1987).

Climatic data were obtained from Bilecik, Bozüyük and İnegöl Meteorology Stations (Anonymous, 1995). Mean temperature of Bilecik is 12.3°C and mean precipitation is 436.4 mm. They are 10.4°C and 484.2 mm and 12.3°C and 568.4 mm for Bozüyük and İnegöl, respectively. When all of the meteorologic data is evaluated, the study area is in the first variety of the East Mediterranean (WSFS), (Akman, 1990), (Table1).

According to Emberger (1952), Bilecik and İnegöl belong to semi-arid Mediterranean and Bozüyük belongs to low-precipitating Mediterranean climate regions.

Meteorological data obtained from Bilecik, İnegöl and Bozüyük Meteorology Stations were evaluated according to the Walter method (1960), (Cireli et al., 1983). According to the data, dry period is between fourth and tenth months (Figure 2-4).

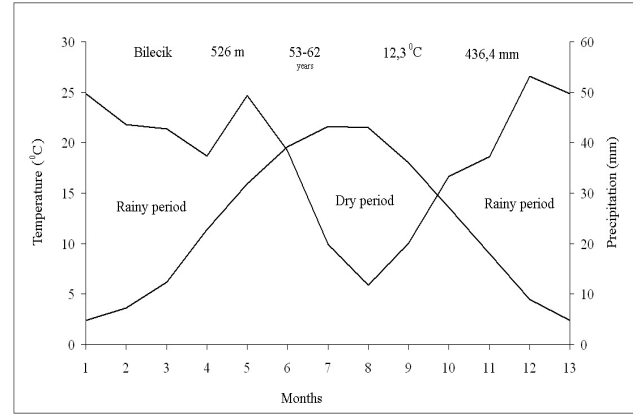


Figure 2. Ombrothermic diagram of Bilecik province.

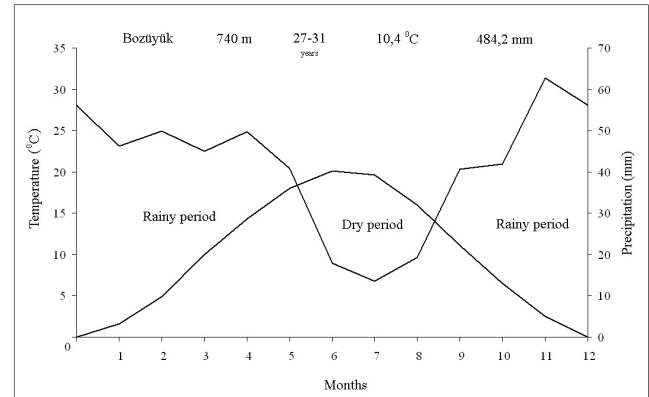


Figure 3. Ombrothermic diagram of Bozüyük county.

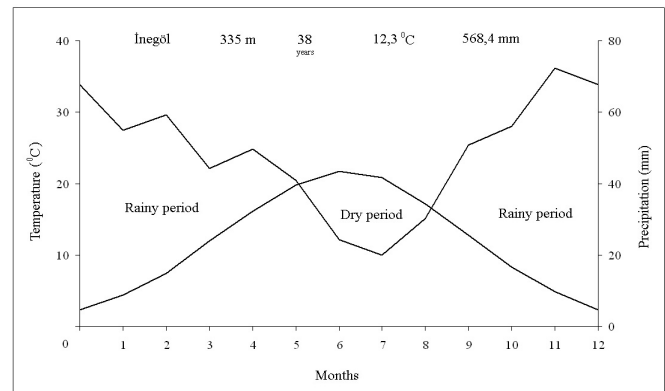


Figure 4. Ombrothermic diagram of İnegöl county.

Table 1. Annual and seasonal precipitation and precipitation regimes of Bilecik, Bozüyük and İnegöl.

Station	Spring (Sp)	Summer (S)	Fall (F)	Winter (W)	Annual (Total)	Precipitation Regime
Bilecik	129.5	69.9	90.6	146.4	436.4	W.Sp.F.S.
Bozüyük	144.6	72.3	101.9	165.3	484.2	W.Sp.F.S.
İnegöl	151.1	85.0	137.0	195.0	568.4	W.Sp.F.S.

Main vegetation types of the study area are forest, shrub and grass vegetations. When phytosociological situation of plant associations in the research area is investigated, it can be seen that the plant associations belonging to *Quercetea pubescentis* and *Quercus-Fagetea* classis are dominant (Akman, 1995; Türe, 2001; Türe et al. , 2005).

In the region, Günyurdu and Küçükelmali dam construction studies may damage the vegetational structure. To improve an ecological approach about natural source management, methods and programs are needed to be improved to determine and monitor the changes in species and genetic diversity specially in threaten ecosystems (Anonymous, 2001; Stohlgren et al. , 2000, Ocak et al. , 2007, Türe and Böcük, 2007). So, the studies related to determining the biological diversity of natural areas, destroying the habitats of many species with water and causing important ecological changes are getting more important (Erdir and Türe, 2003; Stohlgren et al., 1997).

Ahi mountain and its surroundings were selected as the research area, because no studies of this scope have been done so far. In addition, this research can carry great importance for a better understanding of the floristic changes of the region in the future. It was also aimed to emphasize the importance of existing plant species in the environmental impact assessment work which will be realized.

2. MATERIAL AND METHODS

Investigation of the floristic and ecological characteristics of Ahi mountain was carried out between the years 1997 and 2000. All the voucher specimens are kept in the Herbarium of Anadolu University, Faculty of Science (ANES).

Flora of Turkey and the East Aegean Islands I-X (Davis, 1965-1985; Davis et al., 1988, Güner et al., 2000) and other sources were used as the main sources for the identification of plant samples (Boissier, 1879-1884; Heywood and Tutin, 1964; Polunin, 1969; Sezik, 1982; Baytop, 1997; Baytop, 1998).

Identified plant taxa were also checked in ANK (Ankara University Herbarium, Ankara), GAZİ (Gazi University Herbarium, Ankara) and ANES (Anadolu University Science Faculty Herbarium, Eskişehir).

Vascular plant diversity was listed according to Davis (1965-1988) and arranged according to Brummitt and Powell (1992). The list gives first taxa for the

species and subspecies followed by locality, altitude, date, herbarium code and number, life form, endemism and phytogeographical region. Cultivated plant taxa determined in the study area is given as "Cultivated" in the list and new records for the region abbreviated as "*".

Endemic and rare species were categorized according to IUCN (2001) and Ekim et al. (2000). These abbreviations are as follows: LC-Least Concern, NT: Near Threatened. Abbreviations used to imply the phytogeographical regions, endemism and life forms are Euro-Sib.-Euro-Siberian, Ir.-Tur.-Irano-Turanian, Medit.-Mediterranean, End.-Endemic, Cosm. Cosmopolitan, H.-Hemicryptophyte, Ch.-Chamaphyte, Ph.-Phanerophyte, Miph.-Microphanerophyte, Mph.-Macrophanerophyte, Nph.-Nanophanerophyte, G.-Geophyte, VP.-Vascular Parasite and T.-Therophyte.

Mean values of the physical and chemical parameters of the soils where dominant plant taxa distributes are given in Table 2 and Table 3. The physical and chemical analyses of soil samples belonging to different vegetation types in the area were made by Eskişehir Forest Soil and Ecology Research Institute.

3. RESULTS AND DISCUSSION

During this study, 287 genera belonging to 75 families and 461 plant taxa (306 species, 100 subspecies and 55 varieties) were determined. One species belong to division *Pteridophyta* while four hundred of sixty species belong to division *Spermatophyta*. *Gymnospermae* is represented with 4 taxa, while *Angiospermae* is represented with 456 taxa. Three hundred and ninety species of *Angiospermae* belong to *Dicotyledonae*, the rest (66) belongs to *Monocotyledonae* (Table 4).

Distribution of taxa according to phytogeographic regions is as follows: Irano-Turanian 23 (4.9%), Mediterranean 45 (9.7%), Euro-Siberian 79 (17.1%), unknown or multiregional 314 (68.1%). Twenty five plant taxa (5.4%) are endemic (Table 4). This area is also at the junction point of three phytogeographic areas which makes it a transition zone (Türe and Tokur 2000, Türe et al. 2004a, Türe et al. 2004b, Türe et al. 2005). When it is looked the phytogeographical distribution of the taxa, it is determined that Euro-Siberian elements be dominant. According to Zohary (1973) , presence of *Fagus orientalis* Lipsky, *Pinus sylvestris* L. , *Carpinus betulus* L. , *Abies nordmanniana* (Stev.) Spach subsp. *bornmuelleriana* (Mattf.) Coode & Cullen shows that the study area is under influence of Euxine province.

Basic life form spectrum is represented in the study area as follows: Therophytes 25.6% (118), hemi-cryptophytes 41.2% (190), phanerophytes 12.2% (56), geophytes 10.4% (48), chameophytes 10.2% (47) and vascular parasites 0.4% (2). Therophytes and hemi-cryptophytes are represented by the highest percentage in the flora. Because the former spend the summer in the form of seeds and the latter in the form

of vegetative organs (Table 4), (Keshet et al. 1990; Floret et al. 1990; Türe 2003).

A total of 24 species, all endemics, are in a risk category according to IUCN risk categories (Ekim et al., 2000; IUCN, 2001). Twenty two plant taxa are in LC (least concern) and 2 are in NT (near threatened) risk category (Table 4, 5).

Table 2. Mean values of physical parameters of the soils where a dominant plant community distributes.

Plant Communities	Depth (cm.)	Sand (%)	Silt (%)	Clay (%)	Soil Type	Field Capacity (%)	Discoloring Point	Useful humidity
<i>Pinus nigra</i> subsp. <i>pallasiana</i>	0-100	36.08	21.64	42.27	Silt	32.52	32.29	6.89
<i>Quercus cerris</i>	0-100	47.27	25.91	26.82	Sandy-Silty-Sediment	24.38	13.15	11.23
<i>Quercus pubescens</i>	0-100	42.48	16.72	40.79	Clay Sediment	27.03	18.00	9.02
Heterogen *	0-100	62.99	18.39	18.61	Sandy Sediment	18.28	10.08	8.20

* *Fagus orientalis*, *Carpinus betulus*, *Abies nordmanniana* subsp. *bornmuelleriana*

Table 3. Mean values of the chemical parameters of the soils where a dominant plant community distributes.

Plant Communities	Depth (cm.)	pH	CaCO ₃ % Total	Organic Matter %	N %	Substitutable cations (me./100 gr. soil)				K.D.K. me./100 gr.soil	P ₂ O ₅ ppm	EC.10 ³ 25°C'de mS/cm
						Ca ⁺⁺	Mg ⁺⁺	K ⁺	Na ⁺			
<i>Pinus nigra</i> subsp. <i>pallasiana</i>	0-100	6.55	0.0	5.63	0.28	11.78	5.09	0.76	0.13	44.58	49.66	0.32
<i>Quercus cerris</i>	0-100	7.41	0.97	2.49	0.12	11.49	1.41	0.23	0.14	23.36	2.33	0.37
<i>Quercus pubescens</i>	0-100	7.75	7.46	3.02	0.15	17.88	3.04	0.34	0.11	34.52	13.00	0.37
Heterogen*	0-100	7.81	3.89	3.15	0.15	16.23	2.43	0.60	0.07	20.76	71.66	0.41

* *Fagus orientalis*, *Carpinus betulus*, *Abies nordmanniana* subsp. *bornmuelleriana*

Table 4. Floristic and ecologic analysis and the threatened plants of study area.

		Spermatophyta					Total
		Pteridophyta	Gymnospermae	Angiospermae			
				Dicotyledonae	Monocotyledonae		
Taxonomic categories	Families	1	2	64	8	75	
	Genera	1	3	243	40	287	
	Species	1	4	390	66	461	
	Subspecies	-	3	86	11	100	
	Varieties	-	-	53	2	55	
Phytogeographical Region/Endemism	Endemic	-	-	23	2	25	
	Irano-Turanian	-	-	21	2	23	
	Mediterranean	-	-	33	12	45	
Life forms	Euro-Siberian	-	2	61	16	79	
	Phanerophytes	-	4	52	-	56	
	Chamaephytes	-	-	47	-	47	
	Hemicryptophytes	-	-	171	19	190	
	Therophytes	-	-	100	18	118	
	Geophytes	1	-	19	29	48	
	Vascular Parasites	-	-	2	-	2	
Conservation status	Least Concern (LC)	-	1	19	2	22	
	Near Threatened (NT)	-	-	1	1	2	

Table 5. The threatened plants in the study area.

Plant Taxa	Risk Status
<i>Abies nordmanniana</i> (Stev.) Spach	
subsp. <i>bornmuelleriana</i> (Mattf.) Coode & Cullen	LC
<i>Acanthus hirsutus</i> Boiss.	LC
<i>Alkanna orientalis</i> (L.) Boiss. var. <i>leucantha</i> (Bornm.) Hub.-Mor.	NT
<i>Alyssum pateri</i> Nyár. subsp. <i>pateri</i>	LC
<i>Anthemis aciphylla</i> Boiss. var. <i>discoidea</i> Boiss.	LC
<i>Astragalus tmoleus</i> Boiss. var. <i>bounacanthus</i> (Boiss.) Chamberlain	LC
<i>Campanula lyrata</i> Lam. subsp. <i>lyrata</i>	LC
<i>Centaurea olympica</i> C. Koch	LC
<i>Colchicum bornmuelleri</i> Freyn	LC
<i>Crocus biflorus</i> Miller subsp. <i>pulchricolor</i> (Herbert) Mathew	N
<i>Dianthus lydux</i> Boiss.	LC
<i>Euphorbia anacamperos</i> Boiss. var. <i>anacamperos</i>	LC
<i>Euphorbia falcata</i> L. subsp. <i>macrostegia</i> (Bornm.) O.Schwarz	LC
<i>Iris schachtii</i> Markgraf	LC
<i>Linum hirsutum</i> L. subsp. <i>anatolicum</i> (Boiss.) Hayek var. <i>anatolicum</i>	LC
<i>Minuartia anatolica</i> (Boiss.) Woron. var. <i>anatolica</i>	LC
<i>Onobrychis armena</i> Boiss. & Huet	LC
<i>Onosma bornmuelleri</i> Hausskn.	LC
<i>Phlomis russeliana</i> (Sims.) Moentham	LC
<i>Pilosella hoppeana</i> (Schultes) C.H. & F.W.Schultz	LC
subsp. <i>lydia</i> (Bornm. & Zahn) Sell & West	
<i>Rhamnus thymifolius</i> Bornm.	LC
<i>Salvia dichroantha</i> Stapf	LC
<i>Verbascum cheiranthifolium</i> Boiss. var. <i>asperulum</i> (Boiss.) Murb.	LC
<i>Veronica multifida</i> L.	LC

Endemism ratio of the research area is 5.4%. According to Davis (1975), endemism ratio of the Euro-Siberian phytogeographic region is lower than that of the other two phytogeographic regions. It is known that the regions which have high endemic ratios are Central Anatolia, East and South Anatolia (Akman, 1993). However, the endemism ratio of the Black Sea region is about 5%, which is the result of the presence of more stable environmental factors when compared with the Central, Eastern and South Anatolian regions of Turkey. The similarity of the study area to the Black Sea region and the lack of extreme ecological factors may be one of the most important reasons for the low endemism ratio of the study area (Türe and Tokur, 2000; Türe et al., 2005).

The first five families with the highest number of species are Asteraceae 63 (13.67%), Fabaceae 41

(8.89%), Poaceae 36 (7.81%), Lamiaceae and Rosaceae 27 (5.86%), (Table 6).

Table 6. Comparison of the largest families in the study area and nearby regions in terms of taxa number.

This study, 2007 (Number-%)	Türe and Tokur, 2001 (Number-%)	Ocak and Tokur, 2001 (Number-%)	Ekim and Akman, 1990 (Number-%)
63-13.67	51-10.0	52-11.37	65-9.7
<i>Asteraceae</i>	<i>Asteraceae</i>	<i>Asteraceae</i>	<i>Asteraceae</i>
41-8.89	47-9.2	51-11.15	64-9.5
<i>Fabaceae</i>	<i>Fabaceae</i>	<i>Fabaceae</i>	<i>Fabaceae</i>
36-7.81	36-7.1	39-8.33	40-5.9
<i>Poaceae</i>	<i>Lamiaceae</i>	<i>Lamiaceae</i>	<i>Lamiaceae</i>
27-5.86	31-6.11	35-7.65	33-4.9
<i>Rosaceae</i>	<i>Brassicaceae</i>	<i>Poaceae</i>	<i>Brassicaceae</i>
27-5.86	30-5.9	34-7.43	30-4.4
<i>Lamiaceae</i>	<i>Poaceae</i>	<i>Brassicaceae</i>	<i>Apiaceae</i>
21-4.55	21-4.1	16-3.50	29-4.3
<i>Brassicaceae</i>	<i>Boraginaceae</i>	<i>Apiaceae</i>	<i>Scrophulariaceae</i>
19-4.12	20-3.9	16-3.50	28-4.1
<i>Caryophyllaceae</i>	<i>Caryophyllaceae</i>	<i>Boraginaceae</i>	<i>Rosaceae</i>
18-3.90	19-3.7	14-3.07	25-3.7
<i>Scrophulariaceae</i>	<i>Rosaceae</i>	<i>Caryophyllaceae</i>	<i>Poaceae</i>
17-3.69	19-3.7	13-2.87	22-3.2
<i>Boraginaceae</i>	<i>Apiaceae</i>	<i>Ranunculaceae</i>	<i>Caryophyllaceae</i>
15-3.25	15-2.9	13-2.87	----
<i>Umbelliferae</i>	<i>Scrophulariaceae</i>	<i>Rosaceae</i>	----
177-38.3	216-42.7	173-37.9	345-50.3
<i>Others</i>	<i>Others</i>	<i>Others</i>	<i>Others</i>
461-100	506-100	456-100	681-100
<i>Total</i>	<i>Total</i>	<i>Total</i>	<i>Total</i>

According to the table, *Asteraceae* (*Compositae*) has the most number of plant taxa and it is followed by *Fabaceae* (*Leguminosae*) and *Poaceae* (*Gramineae*). These results are similar to the other studies (Türe and Tokur, 2000; Ocak and Tokur, 2000; Ekim and Akman, 1991). In terms of *Poaceae* family, these results are similar to the other studies numerically while *Poaceae* family leaves its place to *Lamiaceae* family proportionally. *Asteraceae*, *Fabaceae*, *Lamiaceae*, *Poaceae* and *Brassicaceae* (*Cruciferae*) families have the most number of plant taxa of Turkey. Most of the plant taxa determined in the area belong to these 5 families (42.0%). Specifically *Asteraceae* family has the most common family both in Turkey and in the World. This is because most members of this family protect themselves with their spiny structures, produce large amount of seeds, have some mechanisms to be able distribute these seeds easily and high ecological tolerance. *Poaceae* family has the plant taxa which are able to distribute in different habitats such as prairie, aquatic areas (Türker and Güner, 2003; Ocak et al., 2007). These characteristics of *Asteraceae* and *Poaceae* made these families' members possible to be able to distribute in agricultural areas (Türe and Böcük, 2000).

Genera with the highest number of species in the research area are *Trifolium* (8), *Centaurea* (8), *Rumex* (6), *Veronica* (6), *Salvia* (6), *Bromus* (6), (Table 7).

Table 7. Comparison of the largest genera in the study area and nearby regions in terms of taxa number.

This study (2007)	Türe-Tokur (2001)	Ocak-Tokur (2001)	Ekim-Akman (1991)
<i>Trifolium</i>	<i>Salvia</i>	<i>Salvia</i>	<i>Trifolium</i>
8	9	8	13
<i>Centaurea</i>	<i>Trifolium</i>	<i>Alyssum</i>	<i>Galium</i>
8	9	8	12
<i>Rumex</i>	<i>Euphorbia</i>	<i>Centaurea</i>	<i>Vicia</i>
6	9	7	11
<i>Veronica</i>	<i>Ranunculus</i>	<i>Trifolium</i>	<i>Astragalus</i>
6	9	7	10
<i>Salvia</i>	<i>Centaurea</i>	<i>Euphorbia</i>	<i>Salvia</i>
6	6	7	9
<i>Bromus</i>	<i>Alyssum</i>	<i>Onobrychis</i>	<i>Silene</i>
6	6	6	8
<i>Polygonum</i>	<i>Geranium</i>	<i>Ranunculus</i>	<i>Lathyrus</i>
5	6	5	8

Centaurea L. (8) (*Asteraceae*) and *Trifolium* L. (8) (*Leguminosae*) have the highest number of plant taxa and these are followed by *Bromus* L. (6) (*Poaceae*), *Salvia* L. (6) (*Lamiaceae*) and *Veronica* L. (6) (*Scrophulariaceae*). When these values are compared with other studies, genus *Trifolium* is similar to the studies made by Türe and Tokur (2000) and Ekim and Akman 1991, genus *Centaurea* is most similar to the study made by Ocak and Tokur (2001), genus *Salvia* and *Bromus* are not similar to other studies. According to Flora of Turkey (Davis, 1965-1988; Davis et al., 1988), the largest genus is *Astragalus* L. (*Leguminosae*), but in our research it is not. Generally, *Astragalus* has a wide distribution in the Irano-Turanian phyto-geographic region but our research area is in the Euro-Siberian phyto-geographic region. It is thought that this is the reason for *Astragalus* not being in the first order (Türker and Güner, 2003).

When the pytosociological situation of Ahi mountain is observed, it is seen that plant taxa belonging to *Quercetea pubescentis* (Br.-Bl. Evlieger) Fuk & Fab. 1968 and *Quercetea pubescentis* Oberd. 1948 classis are dominant (Akman, 1995). This situation is similar to the study in Yirce and Muratdere Forest Series (Türe, 2001; Türe et al. 2005). Although present study is similar to the studies of Gülümbe Mountains (Ocak and Tokur, 2000) and Sündiken Mountains (Ekim and Akman, 1991) in terms of these classis phytosociologically, it is not similar to these studies in terms of presence of plant taxa belonging to *Quercetea ilicis* Br.-Bl. 1942 classis. This situation is also corrected by the phyto-geographical distribution of the plant taxa. Four main vegetation types can be distinguished in this study area (Türe, 2001; Türe et al., 2005). Forest vegetation is commonly consisted of *Pinus nigra* J.F.Arnold subsp. *nigra* var. *caramanica* (Loudon)

Rehder, *Quercus cerris* L. var. *cerris*, *Pinus sylvestris* L., *Fagus orientalis* Lipsky, *Carpinus betulus* L., *Abies nordmanniana* (Stev.) Spach subsp. *bornmuelleriana* (Mattf.) Coode & Cullen, *Prunus spinosa* L. subsp. *dasyphylla* (Schur) Domin, *Prunus divaricata* Ledeb. subsp. *divaricata*, *Acer campestre* L. subsp. *campestre*, *Tilia argentea* Desf. ex DC. Some areas have been changed into shrub and steppe areas by destroying forests. The common species of shrub vegetation are *Quercus pubescens* Willd., *Cistus laurifolius* L., *Juniperus oxycedrus* L. subsp. *oxycedrus*, *Crataegus monogyna* L. subsp. *monogyna*, *Rosa canina* L., *Paliurus spina-christi* Miller, *Rhamnus thymifolius* Bornm., *Genista lydia* Boiss. var. *lydia*, *Berberis crataegina* DC., *Clematis vitalba* L., *Daphne pontica* L., *Quercus petraea* (Matt.) Liebl. subsp. *iberica* (Steven ex Bieb.) Krassiln., *Ephedra major* L.

Step vegetation, most widespread, develops on calcereous, stony, not deep superficial soil, limestone main rock. Soil have little organic materials, it can be washed with rain (Atalay, 1994; Türe and Böcük, 2007; Ocak et al., 2007). Common plant species of stepe areas can be seen on basic soils containing low nitrogen and high boron concentrations. (Türe and Bell, 2004).

Nigella arvensis L. var. *glauca* (Boiss.) N. Terracc., *Alyssum borzaeanum* E. I. Nayardy, *Helianthemum nummularium* (L.) Miller subsp. *nummularium*, *Polygala supina* Schreb., *Minuartia anatolica* (Boiss.) Woron. var. *anatolica*, *Dianthus zonatus* Fenzl var. *zonatus*, *Hypericum perforatum* L., *Linum hirsutum* L. var. *anatolicum* (Boiss.) Hayek, *Ononis spinosa* L. subsp. *leiosperma* (Boiss.) Širj., *Eryngium campestre* L. var. *campestre*, *Scabiosa argentea* L., *Xanthium spinosum* L., *Centaurea solstitialis* L. subsp. *solstitialis*, *Centaurea virgata* Lam., *Xeranthemum annuum* L., *Convolvulus arvensis* L., *Echium italicum* L., *Teucrium polium* L., *Globularia trichosantha* J.C.Fisch. & G.Mey., *Ajuga chamaepitys* (L.) Schreb. subsp. *chia* (Schreber) Arcangeli var. *chia*, *Sideritis montana* L. subsp. *montana*, *Ziziphora capitata* L., *Aegilops geniculata* Roth, *Hordeum bulbosum* L., *Bromus tectorum* L., *Koeleria cristata* Pers., *Poa bulbosa* L., *Stipa lessingiana* Trin & Rupr, *Dactylis glomerata* L. subsp. *glomerata*, *Acantholimon acerosum* L. var. *acerosum*.

Wetland areas, the most biological productive areas of the world, let many different plant and animal populations, specially water birds, develop and shelter like tropical forests (Türe et al., 2004a).

Ranunculus constantinopolitanus (DC.) d'Urv., *Stellaria media* (L.) Vill. subsp. *media*, *Rumex acetosella* L., *Rubus sanctus* Schreb., *Potentilla reptans* L., *Agrimonia eupatoria* L., *Lythrum salicaria* L., *Epilobium hirsutum* L., *Dipsacus laciniatus* L., *Anagallis arvensis* L. ssp. *arvensis*, *Trachystemon orientalis* (L.) G.Don, *Veronica anagallis-aquatica* L., *Mentha longifolia* (L.) Huds. subsp. *thyphoides* (Briq.) Harley var. *thyphoides*, *Plantago major* L. subsp. *major*, *Salix alba* L., *Platanus orientalis* L., *Juncus inflexus* L., *Typha*

angustifolia L., *Tamarix smyrensis* L., *Phragmites australis* (Cav.) Trin. ex Steud., *Lemna minor* L., *Potamogeton crispus* L. are common species of humid and wetland areas.

In the study area, 202 taxa have using potential as drug, 20 taxa as dye preparation, 105 taxa as food, 31 taxa as industry and 36 taxa as decorative plants (Türe and Türe, 2002; Chadwick and Marsh, 1994; Baytop, 1999). This situation is important to conserve our biological richness (Çepel, 1997; Ojeda et al., 2000; Mishra and Rawat, 1998).

Habitat loss, clearing of the natural vegetation for cultivation, overgrazing, logging and specially Günyurdu and Küçükemalı dam construction studies are the main causes of threats in the study area (Ghazanfar, 1998; Türe and Böcük, 2000; Türe and Ocak, 1997). Besides, dam constructions on the water sources of aquatic ecosystems, changing the river banks and taking too much water from the system are one of the most important factor of species loss and habitat destruction (Türe et al., 2004a). These endangered species and natural, vegetation cover will not fully become extinct in the world because of the dam lake. But their restricted life areas will become more restricted and also some aquatic species will spread to new occurring habitats in the area. As a result of this study, it can be expected that gradually the important floristic changes will especially take place in the irrigation canals and dam lake banks due to the changing environmental conditions when dam construction is complete and when the water level rises.

It is known that the information of Turkey's plants is not fully completed. So, some researchers imply that small areas should be chosen to study in terms of floristic and vegetational diversity instead of studying very wide areas (Çırpıcı, 1987). This situation is also important to know our biological richness as well as to protect the gene sources (Çepel, 1997).

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Appendix Plant List

Pteridophyta Sphenopsida Hypolepidaceae

Pteridium aquilinum (L.) Kuhn.

B2 Bursa: İnegöl, around Hamidabat village, road edge, 940 m, 30.5.1999, ANES 5666, G.

Spermatophyta Gymnospermae Pinaceae

Abies nordmanniana (Stev.) Spach subsp. *bornmuelleriana* (Mattf.) Coode & Cullen

A2 Bilecik: Pazaryeri, around Bahçesultan village, road edge, 970 m, 24.10.1999, ANES 5669, Mph., End., Euxine el.

Pinus sylvestris L.

A2 Bilecik: Pazaryeri, around Bahçesultan village, north slopes, 990 m, 30.5.1999, ANES 5670-5671, Mph., Euro-Sib. el.

Pinus nigra J.F.Arnold subsp. *nigra* var. *caramanica* (Loudon) Rehder

A2 Bilecik: Pazaryeri, around Gümüşdere village, Hanyeri sırtı, north slopes, 850-900 m, 30.5.1999, ANES 5672-5675, Mph., Cosm.

Cupressaceae

Juniperus oxycedrus L. subsp. *oxycedrus*

B2 Bilecik: Bozüyük-Bilecik road, the turn to Pazaryeri village, south slopes, 640-670 m, 14.5.2000, ANES 5676, Nph., Cosm.

Angiospermae Dicotylodoneae Ranunculaceae

Helleborus orientalis Lam.

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 3 km, Deveciyolu place, north-west slopes, open field, 900-920 m, 16.5.1999, ANES 5677-5679, G., Euxine el.

Nigella arvensis L. var. *glauca* Boiss.

B2 Bursa: İnegöl, around Hamidabat village, road edge, 940 m, 30.5.1999, ANES 5680-5681, T., Cosm.

Consolida orientalis (Gay) Schröd.

A2 Bilecik: between Pazaryeri and Gümüşdere vilages, Karagöztarla hill, south slopes, 780 m, 15.8.1999, ANES 5682, T., Cosm.

* *Consolida hellespontica* (Boiss.) Chater

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 4 km, Around road repair station, north slopes, 920 m, 1.8.1999, ANES 5683, T., Nr.

Clematis vitalba L.

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 5 km, Deveciyolu hill, south slopes, 950 m, 18.7.1999, ANES 5684-5686, Nph., Cosm.

Clematis viticella L.

B2 Bilecik: Bozüyük-Bilecik road, the turn to Pazaryeri village, south slopes, 640 m, 13.6.1999, ANES 5687-5688, Nph., Cosm.

Adonis flamma Jacq.

B2 Bilecik: Karaköy, Çömlekçi road, southwest slopes, 640 m, 14.5.2000, ANES 5689-5690, T., Cosm.

Ranunculus constantinopolitanus (DC.) d'Urv.

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 3 km, Deveciyolu place, northwest slopes, open field, 900-920 m, 16.5.1999, ANES 5691-5693, G., Cosm.

Ranunculus damascenus Boiss. & Gaill.

B2 Bilecik: Bozüyük-Bilecik road, the turn to Pazaryeri village, south slopes, 640-670 m, 14.5.2000, ANES 5694, G., Ir.-Tur. el.

* *Ranunculus arvensis* L.

B2 Bilecik: Karaköy, Çömlekçi road, southwest slopes, 640 m, 14.5.2000, ANES 5695-5697, T., Nr., Cosm.

Ranunculus ficaria L. subsp. *ficariiformis* Rouy & Fouc.

A2 Bilecik: Pazaryeri, around Gümüşdere vilage, south slopes, 820 m, 26.3.2000, ANES 5696; A2 Bilecik: Pazaryeri, around Nazıfpaşa village, north slopes, near Kirazlı stream, 950 m, 26.3.2000, ANES 5697, G.

Thalictrum lucidum L.

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan vilages 5. km, Deveciyolu hill, south slopes, 950 m, 18.7.1999, ANES 5698, G.

Berberidaceae***Berberis crataegina* DC.**

B2 Bilecik: Bozüyük-Bilecik road, the turn to Pazaryeri village, south slopes, 640-670 m, 14.5.2000, ANES 5699, Nph.

Papaveraceae***Glaucium corniculatum* (L.) Rud. subsp. *corniculatum***

A2 Bilecik: Pazaryeri, Between Gümüşdere and Bahçesultan villages, 4. km, Around road repair station, north slopes, 920 m, 1.8.1999, ANES 5700, H.

*** *Glaucium grandiflorum* Boiss. & Huet var. *grandiflorum***

B2 Bilecik: Karaköy, Çömlekçi road, southwest slopes, 640 m, 14.5.2000, ANES 5701-5702, H., Nr., Ir.-Tur. el.

*** *Roemeria hybrida* (L.) DC. subsp. *hybrida***

B2 Bilecik: Bozüyük-Bilecik road, The turn to Pazaryeri village, south slopes, 640-670 m, 14.5.2000, ANES 5703, T., Nr., Cosm.

***Papaver rhoeas* L.**

A2 Bursa: İnegöl, between Nazifpaşa-Kurşunlu villages 10. km, west slopes, 740-750 m, 16.5.1999, ANES 5704-5707, T., Cosm.

***Hypocoum imberbe* Sibth. & Sm**

B2 Bilecik: Karaköy, Çömlekçi road, southwest slopes, 640 m, 14.5.2000, ANES 5708-5709, T., Cosm.

*** *Fumaria officinalis* L.**

A2 Bilecik: Pazaryeri, around Küçükemal village, road edge, 850 m, 15.8.1999, ANES 5710-5713, T., Nr.

***Fumaria parviflora* Lam.**

B2 Bilecik: Karaköy, Çömlekçi road, southwest slopes, 640 m, 14.5.2000, ANES 5714, T.

Brassicaceae (Cruciferae)***Hirschfeldia incana* (L.) Lag.-Foss.**

A2 Bilecik: Pazaryeri, around Gümüşdere village, south slopes, 820 m, 18.7.1999, ANES 5715-5716, T., Cosm.

***Diploaxis tenuifolia* (L.) DC.**

A2 Bilecik: between Pazaryeri and Gümüşdere, road edge, 760 m, 19.9.1999, ANES 5717-5718, H.

*** *Raphanus raphanistrum* L.**

A2 Bilecik: Pazaryeri, around Küçükemal village, road edge, 850 m, 15.8.1999, ANES 5719-5720, T., Nr.

***Rapistrum rugosum* (L.) All.**

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 3 km, Devciyolu place, north slopes, near Gümüş stream, 890 m, 16.5.1999, ANES 5721-5724, T.

Cardaria draba* (L.) Desv. subsp. *draba

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 5 km, road edge, 950 m, 16.5.1999, ANES 5725-5727, H., Cosm.

***Thlaspi perfoliatum* L.**

A2 Bilecik: Pazaryeri, Bahçesultan-Nazifpaşa arası, 2 km, south slopes, 970 m, 13.6.1999, ANES 5728, T., Cosm.

***Capsella bursa-pastoris* (L.) Medik.**

A2 Bilecik: Pazaryeri, around Küçükemal village, north slopes, 850-900 m, 30.5.1999, ANES 5729-5732, T., Cosm.

***Neslia apiculata* Fisch.**

B2 Bilecik: Karaköy, Çömlekçi road, southwest slopes, 640 m, 14.5.2000, ANES 5733-5734, T., Cosm.

Alyssum minus* (L.) Rothm. var. *minus

A2 Bilecik: Pazaryeri, between Bahçesultan-Nazifpaşa villages, 2 km, south slopes, 950 m, 13.6.1999, ANES 5735-5737, T., Cosm.

Alyssum pateri* Nyár. subsp. *pateri

B2 Bilecik: Bozüyük-Bilecik road, The turn to Pazaryeri village, south slopes, 640-670 m, 14.5.2000, ANES 5738, Ch., End., Ir.-Tur. el.

***Alyssum borzaeum* Nyár.**

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 4 km, Around road repair station, north slopes, 920 m, 1.8.1999, ANES 5739-5740, Ch.

Alyssum murale* Waldst. & Kit. var. *murale

B2 Bilecik: Karaköy, Çömlekçi road, southwest slopes, 640 m, 14.5.2000, ANES 5741, Ch., Cosm.

***Clypeola jonthlaspi* L.**

B2 Bilecik: Bozüyük-Bilecik road, the turn to Pazaryeri village, south slopes, 640-670 m, 14.5.2000, ANES 5742, T., Cosm.

Erophila verna* (L.) Chevall. subsp. *verna

B2 Bursa: İnegöl, around Hamidabat village, road edge, 940 m, 30.5.1999, ANES 5743, T., Cosm.

***Turritis glabra* L.**

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 2 km, south slopes, 850 m, 1.8.1999, ANES 5744, H.

***Cardamine bulbifera* (L.) Crantz**

A2 Bilecik: Pazaryeri, around Gümüşdere village, Hanyeri sırtı, north slopes, 850-900 m, 30.5.1999, ANES 5745, G., Euro-Sib. el.

* *Cardamine impatiens* L. var. *pectinata* (Pallas) Trautv.

B2 Bursa: İnegöl, Around Hamidabat village, road edge, 940 m, 13.6.1999, ANES 5746, T., Nr., Euro-Sib. el.

***Malcolmia africana* (L.) R. Br.**

B2 Bilecik: Bozüyük-Bilecik road, the turn to Pazaryeri village, south slopes, 640-670 m, 14.5.2000, ANES 5747, T.

***Erysimum cuspidatum* (Bieb.) DC.**

A2 Bursa: İnegöl, around Kurşunlu village, road edge, 400 m, 16.5.1999, ANES 5748-5750, T., Cosm.

***Sisymbrium altissimum* L.**

B2 Bilecik: Bozüyük-Bilecik road, The turn to Pazaryeri village, field edge, 670 m, 24.10.1999, ANES 5751-5752, H., Cosm.

***Camelina rumelica* Vel.**

B2 Bilecik: Bozüyük-Bilecik road, the turn to Pazaryeri village, south slopes, 640-670 m, 14.5.2000, ANES 5753, T., Cosm.

Resedaceae

Reseda lutea* L. var. *lutea

A2 Bilecik: Pazaryeri, between Bahçesultan-Nazifpaşa villages, 2 km, south slopes, 950 m, 13.6.1999, ANES 5754-5757, H., Cosm.

Cistaceae***Cistus creticus* L.**

A2 Bursa: İnegöl, between Nazifpaşa and Kurşunlu villages, 7 km, road edge, 750-760 m, 16.5.1999, ANES 5758-5759, Mph., Medit. el.

***Cistus salviifolius* L.**

A2 Bursa: İnegöl, between Nazifpaşa-Kurşunlu villages, 10 km, west slopes, 740-750 m, 16.5.1999, ANES 5760, Mph.

Helianthemum nummularium* (L.) Miller subsp. *nummularium

B2 Bilecik: Bozüyük-Bilecik road, the turn to Pazaryeri village, south slopes, 640-670 m, 14.5.2000, ANES 5761, Ch.

***Helianthemum salicifolium* (L.) Miller**

B2 Bilecik: Bozüyük-Bilecik road, the turn to Çamyayla village, north slopes, 620 m, 14.5.2000, ANES 5762-5763, Ch., Cosm.

Violaceae***Viola gracilis* Sibth. & Sm**

B2 Bilecik: Bozüyük-Bilecik road, the turn to Çamyayla village, south slopes, 640 m, 14.5.2000, ANES 5764-5765, H.

Polygalaceae***Polygala supina* Schreb.**

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 5 km, Devciyolu hill, south slopes, 950 m, 18.7.1999, ANES 5766-5767, H., Cosm.

Caryophyllaceae*** *Arenaria serpyllifolia* L.**

A2 Bilecik: Pazaryeri, between Bahçesultan-Nazifpaşa villages, 2 km, south slopes, 950 m, 13.6.1999, ANES 5768, T., Nr.

***Minuartia hirsuta* (Bieb.) Hand.-Mazz. subsp. *falcata* (Gris.) Mattf.**

A2 Bilecik: Pazaryeri, between Nazifpaşa and Kurşunlu villages, 2 km, south slopes, 900 m, 16.5.1999, ANES 5769-5772, Ch.

Minuartia anatolica* (Boiss.) Woron. var. *anatolica

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 3 km, Devciyolu place, north slopes, near Gümüş stream, 890 m, 16.5.1999, ANES 5773-5775, Ch., End.

Minuartia hybrida* (Vill.) Schischk. subsp. *hybrida

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 5 km, road edge, 950 m, 16.5.1999, ANES 5776, T.

Stellaria media* (L.) Vill. subsp. *media

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 3 km, Devciyolu place, north

slopes, near Gümüş stream, 890-900 m, 16.5.1999, ANES 5777-5778, T.

***Stellaria holostea* L.**

A2 Bursa: İnegöl, between Nazifpaşa-Kurşunlu villages, 7 km, south slopes, 750 m, 16.5.1999, ANES 5779, Ch., Euro-Sib. el.

***Cerastium anomalum* Waldst. & Kit.**

B2 Bilecik: Bozüyük-Bilecik road, the turn to Pazaryeri village, south slopes, 640-670 m, 14.5.2000, ANES 5780, Ch.

Moenchia mantica* (L.) Bartl. subsp. *mantica

A2 Bilecik: Pazaryeri, Between Gümüşdere and Bahçesultan villages, 3 km, Devciyolu place, north-west slopes, open field, 900-920 m, 16.5.1999, ANES 5781-5784, T.

***Dianthus micranthus* Boiss. & Heldr.**

B2 Bilecik: Bozüyük-Bilecik road, The turn to Pazaryeri village, north slopes, 660 m, 15.8.1999, ANES 5785, H., Cosm.

Dianthus zonatus* Fenzl var. *zonatus

B2 Bilecik: Bozüyük-Bilecik road, the turn to Pazaryeri village, north slopes, 660 m, 15.8.1999, ANES 5786-5787, Ch.

***Dianthus calocephalus* Boiss.**

A2 Bilecik: Pazaryeri, between Bahçesultan and Nazifpaşa villages, 2 km, south slopes, 950 m, 13.6.1999, ANES 5788-5790, Ch.

***Dianthus lydus* Boiss.**

B2 Bilecik: Bozüyük-Bilecik road, the turn to Pazaryeri village, south slopes, 640-670 m, 14.5.2000, ANES 5791, Ch., End.

***Petrorhagia alpina* (Habl.) Ball. & Heywood subsp. *olympica* (Boiss.) Ball & Heywood**

A2 Bilecik: Pazaryeri, around Gümüşdere village, north slopes, 870-910 m, 19.9.1999, ANES 5792, Ch.

***Petrorhagia velutina* (Guss.) Ball. & Heywood**

A2 Bilecik: Pazaryeri, around Gümüşdere village, Hanyeri sırtı, north slopes, 850-900 m, 30.5.1999, ANES 5793-5797, Ch.

***Saponaria officinalis* L.**

A2 Bilecik: between Pazaryeri and Gümüşdere villages, Beyçayırı place, road edge, 650 m, 1.8.1999, ANES 5798, G., Cultivated.

***Silene italica* (L.) Pers.**

A2 Bilecik: Pazaryeri, around Bahçesultan village, north slopes, 990 m, 13.6.1999, ANES 5799-5800, H., Cosm.

***Silene alba* (Miller) Krause subsp. *divaricata* (Reichb.) Walters**

A2 Bilecik: Pazaryeri, around Küçükelmali village, north slopes, 850-900 m, 30.5.1999, ANES 5801-5807, H.

*** *Silene conica* L.**

B2 Bilecik: Bozüyük-Bilecik road, the turn to Çamyayla village, south slopes, 640 m, 14.5.2000, ANES 5808-5809, H., Nr.

***Agrostemma githago* L.**

A2 Bilecik: Pazaryeri, between Bahçesultan and Nazifpaşa villages, 2 km, south slopes, 950 m, 13.6.1999, ANES 5810, T., Cosm.

Illecebraceae

***Herniaria glabra* L.**

A2 Bilecik: Pazaryeri, around Gümüşdere vil-
lage, Hanyeri sırtı, north slopes, 850-900 m,
30.5.1999, ANES 5811-5812, T.

Polygonaceae***Polygonum amphibium* L.**

A2 Bilecik: Pazaryeri, around Küçükelmali vil-
lage, road edge, 850 m, 15.8.1999, ANES 5813., H.

***Polygonum cognatum* Meissn.**

A2 Bilecik: Pazaryeri, around Nazifpaşa vil-
lage, south slopes, 950 m, 13.6.1999, ANES 5814, H.

***Polygonum arenastrum* Bor.**

A2 Bilecik: Pazaryeri, around Gümüşdere vil-
lage, south slopes, 820 m, 15.8.1999, ANES 5815, T.

***Polygonum pulchellum* Lois.**

A2 Bilecik: Pazaryeri, around Gümüşdere vil-
lage, north slopes, 870-910 m, 19.9.1999, ANES 5816,
T., Cosm.

***Polygonum convolvulus* L.**

A2 Bilecik: between Pazaryeri and Gümüşdere
villages, Karagöztarla hill, south slopes, 780
m, 15.8.1999, ANES 5817, H.

***Rumex acetosella* L.**

A2 Bilecik: Pazaryeri, between Gümüşdere and
Bahçesultan villages, 3 km, Deveciyolu place, north
slopes, near Gümüş stream, 890 m, 16.5.1999, ANES
5818-5822, H., Cosm.

***Rumex scutatus* L.**

A2 Bursa: İnegöl, between Nazifpaşa-Kurşunlu
villages, 5 km, Bakkaçukuru sırtı, north slopes, 900
m, 19.9.1999, ANES 5823, H.

Rumex tuberosus* L. subsp. *tuberosus

B2 Bilecik: Karaköy, Çömlekçi road, southwest
slopes, 640 m, 14.5.2000, ANES 5824, G.

***Rumex crispus* L.**

A2 Bilecik: Pazaryeri, between Bahçesultan-
Nazifpaşa villages, 2 km, south slopes, 950 m,
13.6.1999, ANES 5825-5827, H., Cosm.

***Rumex conglomeratus* Murray**

A2 Bilecik: Pazaryeri, around Gümüşdere vil-
lage, Hanyeri sırtı, north slopes, 850-900 m,
30.5.1999, ANES 5828-5833, H.

***Rumex pulcher* L.**

A2 Bilecik: Pazaryeri, between Gümüşdere and
Bahçesultan villages, 2 km, north slopes, 875 m,
4.7.1999, ANES 5834, H.

Chenopodiaceae*** *Beta trigyna* Waldst. & Kit.**

B2 Bursa: İnegöl, around Hamidabat vil-
lage, road edge, 940 m, 13.6.1999, ANES 5835, Ch., Nr.

*** *Chenopodium botrys* L.**

A2 Bilecik: Pazaryeri, between Gümüşdere and
Bahçesultan villages, 4 km, Around road repair station,
north slopes, 920 m, 1.8.1999, ANES 5836, T., Nr.

Chenopodium album* L. subsp. *album* var. *album

A2 Bilecik: Pazaryeri, between Gümüşdere and
Bahçesultan villages, 2 km, south slopes, 850 m,
1.8.1999, ANES 5837-5838, Ch.

Amaranthaceae***Amaranthus retroflexus* L.**

A2 Bilecik: Pazaryeri, around Küçükelmali vil-
lage, road edge, 850 m, 15.8.1999, ANES 5839-5840,
Ch.

Hypericaceae (Cluciaceae=Guttiferae)***Hypericum organifolium* Willd.**

A2 Bilecik: Pazaryeri, between Nazifpaşa-
Kurşunlu villages, 2 km, south slopes, 900 m,
16.5.1999, ANES 5841-5842, H.

***Hypericum perforatum* L.**

A2 Bilecik: Pazaryeri, around Gümüşdere vil-
lage, Hanyeri sırtı, north slopes, 850-900 m,
30.5.1999, ANES 5843-5850, H., Cosm.

Malvaceae***Hibiscus trionum* L.**

A2 Bilecik: Pazaryeri, around Küçükelmali vil-
lage, road edge, 850 m, 15.8.1999, ANES 5851-5852,
H.

***Malva sylvestris* L.**

B2 Bilecik: Bozüyük-Bilecik road 6 km,
Derbentbaşı sırtı south slopes, field edge, 670 m,
14.5.2000, ANES 5853, H.

*** *Malva neglecta* Wallr.**

B2 Bilecik: Bozüyük-Bilecik road, the turn to
Pazaryeri vil-
lage, north slopes, 660 m, 15.8.1999,
ANES 5854-5855, T., Nr.

*** *Lavatera thuringiaca* L.**

B2 Bilecik: Bozüyük-Bilecik road, the turn to
Pazaryeri vil-
lage, north slopes, 660 m, 15.8.1999,
ANES 5856, Ch., Nr.

***Alcea pallida* Waldst. & Kit.**

A2 Bilecik: Pazaryeri, between Gümüşdere and
Bahçesultan vil-
lages, 5 km, Deveciyolu hill, south
slopes, 950 m, 18.7.1999, ANES 5857, Ch.

***Althaea hirsuta* L.**

A2 Bilecik: Pazaryeri, between Gümüşdere and
Bahçesultan vil-
lages, 2 km, south slopes, 850 m,
1.8.1999, ANES 5858, T.

Tiliaceae***Tilia argentea* Desf. ex DC.**

A2 Bilecik: Pazaryeri, between Bahçesultan and
Nazifpaşa vil-
lages, 3 km, road edge, 970 m, 4.7.1999,
ANES 5859, Miph., Euro-Sib. el.

Linaceae***Linum hirsutum* L. subsp. *anatolicum* (Boiss.) Hayek
var. *anatolicum***

A2 Bilecik: Pazaryeri, between Gümüşdere and
Bahçesultan vil-
lages, 4 km, Around road repair station,
north slopes, 920 m, 1.8.1999, ANES 5860, H., Ir.-
Tur. el.

Linum austriacum* L. subsp. *austriacum

A2 Bilecik: Pazaryeri, around Bahçesultan vil-
lage, north slopes, 990 m, 13.6.1999, ANES 5861-
5862, H.

Geraniaceae

Geranium rotundifolium L.

A2 Bilecik: Pazaryeri, around Gümüşdere vil-
lage, north slopes, 870-910 m, 19.9.1999, ANES 5863,
T., Cosm.

Geranium pusillum Burm. fil.

A2 Bilecik: Pazaryeri, between Gümüşdere and
Bahçesultan villages, 3 km, Düzyol hill, road edge,
910 m, 13.6.1999, ANES 5864-5865, T.

Geranium tuberosum L. subsp. *tuberosum*

B2 Bilecik: Karaköy, Çömlekçi road, field edge,
640 m, 14.5.2000, ANES 5866-5867, G., Cosm.

Geranium asphodeloides Burm. fil. subsp. *asphode- loides*

A2 Bilecik: Pazaryeri, around Gümüşdere vil-
lage, Hanyeri sırtı, north slopes, 850-900 m,
30.5.1999, ANES 5868-5869, H., Euro-Sib. el.

Geranium pyrenaicum Burm. fil.

A2 Bilecik: Pazaryeri, Between Gümüşdere and
Bahçesultan villages, 3 km, Düzyol hill, road edge,
910 m, 16.5.1999, ANES 5870-5873, H.

Erodium ciconium (L.) L'Hérit.

B2 Bilecik: Karaköy, Çömlekçi road, southwest
slopes, 640 m, 14.5.2000, ANES 5874, H.

Erodium cicutarium (L.) L'Hérit. subsp. *cutarium*

A2 Bilecik: Pazaryeri, between Gümüşdere and
Bahçesultan villages, 2 km, south slopes, 850 m,
18.7.1999, ANES 5875-5878, T., Cosm.

Erodium acaule (L.) Becherer & Thell.

A2 Bilecik: Pazaryeri, around Gümüşdere vil-
lage, road edge, 870 m, 13.6.1999, ANES 5879-5883,
H., Medit. el.

Simaroubaceae

Ailanthus altissima (Miller) Swingle

A2 Bilecik: between Pazaryeri and Gümüşdere,
Beyçayırı place, road edge, 650 m, 1.8.1999, ANES
5884, Miph., Cultivated.

Aceraceae

Acer campestre L. subsp. *campestre*

A2 Bilecik: Pazaryeri, around Küçükmalı vil-
lage, north slopes, 850-900 m, 30.5.1999, ANES 5885-
5887, Miph.

Vitaceae

Vitis vinifera L.

A2 Bilecik: Pazaryeri, between Gümüşdere and
Bahçesultan villages, 2 km, south slopes, 850 m,
1.8.1999, ANES 5888-5889, Nph., Cultivated.

Rhamnaceae

Paliurus spina-christi Miller

B2 Bilecik: Bozüyük-Bilecik road, the turn to
Pazaryeri village, south slopes, 640-670 m, 14.5.2000,
ANES 5890, Nph., Cosm.

Rhamnus rhodopeus Velenovsky

B2 Bilecik: Karaköy, Çömlekçi road, southwest
slopes, 640 m, 14.5.2000, ANES 5891, Nph.

Rhamnus thymifolius Bornm.

B2 Bilecik: Bozüyük-Bilecik road, the turn to
Pazaryeri village, south slopes, 640-670 m, 14.5.2000,
ANES 5892, Nph., End.

Celastraceae

Euonymus latifolius (L.) Miller subsp. *latifolius*

B2 Bilecik: Bozüyük-Bilecik road, the turn to
Pazaryeri village, north slopes, 660 m, 15.8.1999,
ANES 5893, Miph., Euro-Sib. el.

Fabaceae (Leguminosae)

Chamaecytisus hirsutus (L.) Link

B2 Bursa: İnegöl, around Hamidabat village,
road edge, 940 m, 30.5.1999, ANES 5894-5895, Ch.

Genista lydia Boiss. var. *lydia*

A2 Bilecik: Pazaryeri, between Gümüşdere and
Bahçesultan villages, 3 km, Devciyolu place, north-
west slopes, open field, 900-920 m, 16.5.1999, ANES
5896-5898, Ch.

Robinia pseudoacacia L.

A2 Bilecik: Pazaryeri, around Gümüşdere vil-
lage, Hanyeri sırtı, north slopes, 850-900 m,
30.5.1999, ANES 5899-5900, Miph., Cultivated.

Galega officinalis L.

A2 Bilecik: Pazaryeri, around Gümüşdere vil-
lage, Hanyeri sırtı, north slopes, 850-900 m,
30.5.1999, ANES 5901-5905, H., Euro-Sib. el.

Colutea cilicica Boiss. & Bal.

B2 Bilecik: Bozüyük-Bilecik road, the turn to
Pazaryeri village, south slopes, 640-670 m, 14.5.2000,
ANES 5906, Nph., Cosm.

* *Astragalus tmoleus* Boiss. var. *bounacanthus* (Boiss.) Chamber.

A2 Bilecik: Pazaryeri, between Gümüşdere and
Bahçesultan villages, 4 km, Around road repair station,
north slopes, 920 m, 1.8.1999, ANES 5907, H., Nr.,
End.

* *Astragalus parnassi* Boiss. subsp. *parnassi*

A2 Bilecik: Pazaryeri, around Gümüşdere vil-
lage, south slopes, 820 m, 18.7.1999, ANES 5908-
5911, Nr, H.

Astragalus lydius Boiss.

B2 Bilecik: Bozüyük-Bilecik road, The turn to
Çamyayla village, south slopes, 640 m, 14.5.2000,
ANES 5912-5913, H., End., Ir.-Tur. el.

Psoralea bituminosa L.

A2 Bilecik: Pazaryeri, Around Gümüşdere vil-
lage, northwest slopes, 890 m, 13.6.1999, ANES 5914,
H., Medit. el.

Phaseolus vulgaris L.

A2 Bilecik: Pazaryeri, Between Gümüşdere and
Bahçesultan villages, 2 Km, south slopes, 850 m,
1.8.1999, ANES 5915-5916, Nph., Cultivated.

* *Cicer arietinum* L.

A2 Bilecik: Pazaryeri, around Gümüşdere vil-
lage, Çatalmeşe hill, east slopes, 820-850 m,
15.8.1999, ANES 5917, H., Nr., Cultivated.

Vicia cracca L. subsp. *stenophylla* Vel.

A2 Bilecik: Pazaryeri, between Gümüşdere and
Bahçesultan villages, 3 km, Devciyolu place, north
slopes, under the *Quercus* forest, 900 m, 16.5.1999,
ANES 5918-5924, H., Cosm.

Vicia pannonica Crantz var. *purpurascens* (DC.) Ser.

A2 Bilecik: Pazaryeri, Bahçesultan-Nazifpaşa
arası, 2 km, south slopes, 970 m, 13.6.1999, ANES
5925-5928, H.

* *Vicia narbonensis* L. var. *narbonensis*

B2 Bilecik: Karaköy, Çömlekçi road, southwest
slopes, 640 m, 14.5.2000, ANES 5929, T., Nr.

Lathyrus aureus (Stev.) Brändzá

A2 Bilecik: Pazaryeri, around Bahçesultan vil-
lage, road edge, 940-950 m, 30.5.1999, ANES 5930-
5931, Ch., Euxine el.

Lathyrus digitatus (Bieb.) Fiori

A2 Bilecik: Pazaryeri, around Gümüşdere vil-
lage, road edge, 870 m, 13.6.1999, ANES 5932, H., E.
Medit. el.

Lathyrus laxiflorus (Desf.) O. Kuntze subsp. *laxiflo-
rus*

A2 Bilecik: Pazaryeri, between Gümüşdere and
Bahçesultan villages, 3 km, Devciyolu place, north
slopes, under the *Quercus* forest, 900 m, 16.5.1999,
ANES 5933-5936, H.

Lathyrus cicera L.

B2 Bilecik: Bozüyük-Bilecik road, the turn to
Pazaryeri village, south slopes, 640-670 m, 14.5.2000,
ANES 5937, T.

Lathyrus nissolia L.

A2 Bilecik: Pazaryeri, between Gümüşdere and
Bahçesultan villages, 3 km, Devciyolu place, north-
west slopes, open field, 900-920 m, 16.5.1999, ANES
5938-5940, T., Cosm.

Ononis spinosa L. subsp. *leiosperma* (Boiss.) Širj.

A2 Bilecik: Pazaryeri, between Gümüşdere and
Bahçesultan villages, 2 km, north slopes, 875 m,
4.7.1999, ANES 5941-5944, Ch., Cosm.

Trifolium repens L. var. *repens*

A2 Bilecik: Pazaryeri, between Gümüşdere and
Bahçesultan villages, 3 km, Devciyolu place, north-
west slopes, open field, 900-920 m, 16.5.1999, ANES
5945-5948, H.

Trifolium nigrescens Viv. subsp. *petrisavii* (Clem.)
Holmboe

A2 Bilecik: Pazaryeri, around Gümüşdere vil-
lage, Hanyeri sırtı, north slopes, 850-900 m,
30.5.1999, ANES 5949-5952, T., Cosm.

Trifolium campestre Schreb.

A2 Bilecik: Pazaryeri, around Gümüşdere vil-
lage, road edge, 870 m, 13.6.1999, ANES 5953-5954,
T., Cosm.

Trifolium resupinatum L. var. *microcephalum* Zoh.

A2 Bilecik: Pazaryeri, between Gümüşdere and
Bahçesultan villages, 3 km, Devciyolu place, north
slopes, near Gümüş stream, 890 m, 16.5.1999, ANES
5955-5957, T.

Trifolium pratense L. var. *pratense*

A2 Bilecik: Pazaryeri, around Gümüşdere vil-
lage, Hanyeri sırtı, north slopes, 850-900 m,
30.5.1999, ANES 5958-5961, H., Cosm.

Trifolium hirtum All.

A2 Bilecik: Pazaryeri, between Bahçesultan-
Nazifpaşa villages, 2 km, south slopes, 950 m,
13.6.1999, ANES 5962-5963, T., Medit. el.

Trifolium arvense L. var. *arvense*

A2 Bilecik: Pazaryeri, around Nazifpaşa vil-
lage, south slopes, 950 m, 13.6.1999, ANES 5964-5966,
T., Cosm.

Trifolium angustifolium L. var. *angustifolium*

A2 Bilecik: Pazaryeri, between Gümüşdere and
Bahçesultan villages, 2 km, north slopes, 875 m,
4.7.1999, ANES 5967-5971, T.

Melilotus officinalis (L.) Desr.

A2 Bilecik: Pazaryeri, between Nazifpaşa-
Kurşunlu villages, 2 km, road edge, 890 m, 16.5.1999,
ANES 5972-5975, T., Cosm.

Melilotus alba Desr.

A2 Bilecik: Pazaryeri, between Gümüşdere and
Bahçesultan villages, 4 km, Around road repair station,
north slopes, 920 m, 1.8.1999, ANES 5976-5977, T.,
Cosm.

Medicago lupulina L.

A2 Bilecik: Pazaryeri, Around Gümüşdere vil-
lage, south slopes, 820 m, 18.7.1999, ANES 5978, H.,
Cosm.

Medicago sativa L. subsp. *sativa*

A2 Bilecik: Pazaryeri, around Gümüşdere vil-
lage, Hanyeri sırtı, north slopes, 850-900 m,
30.5.1999, ANES 5979-5983, H., Cosm.

Medicago polymorpha L. var. *polymorpha*

A2 Bilecik: Pazaryeri, around Gümüşdere vil-
lage, Hanyeri sırtı, north slopes, 850-900 m,
30.5.1999, ANES 5984, T.

Medicago marina L.

A2 Bilecik: Pazaryeri, around Küçükelmali vil-
lage, north slopes, 850-900 m, 30.5.1999, ANES 5985,
T.

Medicago rigidula (L.) All. var. *rigidula*

A2 Bilecik: Pazaryeri, between Gümüşdere and
Bahçesultan villages, 3 km, Devciyolu place, north-
west slopes, open field, 900-920 m, 16.5.1999, ANES
5986-5989, T., Cosm.

Dorycnium graecum (L.) Ser.

A2 Bursa: İnegöl, between Nazifpaşa-Kurşunlu
villages, 7 km, road edge, 750-760 m, 16.5.1999,
ANES 5990-5992, Ch., Euxine el.

Dorycnium pentaphyllum Scop. subsp. *herbaceum*
(Vill.) Rouy

A2 Bilecik: Pazaryeri, around Gümüşdere vil-
lage, south slopes, 820 m, 18.7.1999, ANES 5993-
5995, Ch.

Lotus corniculatus L. var. *tenuifolius* L.

A2 Bilecik: Pazaryeri, around Küçükelmali vil-
lage, road edge, 850 m, 15.8.1999, ANES 5996, H.,
Cosm.

Lotus corniculatus L. var. *alpinus* Ser.

B2 Bursa: İnegöl, around Hamidabat vil-
lage, road edge, 940 m, 30.5.1999, ANES 5997, H.

Coronilla varia L. subsp. *varia*

A2 Bilecik: Pazaryeri, between Bahçesultan-Nazifpaşa villages, 2 km, south slopes, 950 m, 13.6.1999, ANES 6002-6003, H., Cosm.

***Onobrychis armena* Boiss. & Huet**

A2 Bilecik: Pazaryeri, around Gümüşdere village, south slopes, 820 m, 18.7.1999, ANES 6025-6027, H., End.

Rosaceae

***Prunus spinosa* L. subsp. *dasyphylla* (Schur) Domin**

A2 Bilecik: Pazaryeri, around Gümüşdere village, south slopes, 820 m, 18.7.1999, ANES 6028-6030, Miph., Euro-Sib. el.

Prunus divaricata* Ledeb. subsp. *divaricata

A2 Bilecik: Pazaryeri, around Gümüşdere village, road edge, 800-950 m, 30.5.1999, ANES 6031-6036, Miph., Cosm.

***Cerasus avium* (L.) Moench**

B2 Bursa: İnegöl, around Hamidabat village, road edge, 940 m, 30.5.1999, ANES 6037-6039, Miph., Cultivated.

***Cerasus vulgaris* Miller**

B2 Bilecik: Bozüyük-Bilecik road, the turn to Pazaryeri village, south slopes, 640-670 m, 14.5.2000, ANES 6040, Miph., Cultivated.

***Filipendula vulgaris* Moench**

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 2 km, south slopes, 850m, 18.7.1999, ANES 6041, H., Euro-Sib. el.

***Rubus sanctus* Schreber**

A2 Bilecik: Pazaryeri, around Gümüşdere village, Hanyeri sırtı, north slopes, 850-900 m, 30.5.1999, ANES 6042-6046, Ch., Cosm.

Rubus canescens* DC. var. *canescens

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages 2 km, north slopes, 875 m, 4.7.1999, ANES 6047-6049, H., Cosm.

***Potentilla argentea* L.**

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 2 km, north slopes, 875 m, 4.7.1999, ANES 6050-6052, H.

***Potentilla recta* L.**

A2 Bilecik: Pazaryeri, around Gümüşdere village, Hanyeri sırtı, north slopes, 850-900 m, 30.5.1999, ANES 6053-6056, H.

***Potentilla reptans* L.**

A2 Bilecik: Pazaryeri, between Bahçesultan-Nazifpaşa villages, 2 km, south slopes, 950 m, 13.6.1999, ANES 6057-6058, H., Cosm.

***Fragaria vesca* L.**

A2 Bilecik: Pazaryeri, around Gümüşdere village, north slopes, 870-910 m, 19.9.1999, ANES 6059-6061, H.

***Geum urbanum* L.**

A2 Bilecik: Pazaryeri, between Bahçesultan-Nazifpaşa villages, 2 km, road edge, 950 m, 16.5.1999, ANES 6062-6063, H., Euro-Sib. el.

***Agrimonia eupatoria* L.**

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 5 km, Devciyolu hill, south slopes, 950 m, 18.7.1999, ANES 6064-6066, Ch., Cosm.

***Sanguisorba minor* Scop. subsp. *muricata* (Spach) Briq.**

A2 Bilecik: Pazaryeri, around Gümüşdere village, Hanyeri sırtı, north slopes, 850-900 m, 30.5.1999, ANES 6067, H., Cosm.

***Rosa pulverulenta* Bieb.**

A2 Bilecik: Pazaryeri, around Bahçesultan village, north slopes, 990 m, 13.6.1999, ANES 6068, Nph., Cosm.

***Rosa horrida* Fischer**

A2 Bilecik: Pazaryeri, around Nazifpaşa village, south slopes, 950 m, 13.6.1999 ANES 6069-6070, Nph.

***Rosa canina* L.**

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 3 km, Düzyol hill, road edge, 910 m, 16.5.1999, ANES 6071-6077, Nph., Cosm.

***Mespilus germanica* L.**

A2 Bilecik: Pazaryeri, around Gümüşdere village, north slopes, 870-910 m, 19.9.1999, ANES 6078, Miph., Hyrcano-Euxine el., Cultivated.

***Cotoneaster nummularia* Fisch. & Mey.**

B2 Bilecik: Bozüyük-Bilecik road, the turn to Pazaryeri village, road edge, 670 m, 24.10.1999, ANES 6079-6080, Nph., Cosm.

***Crataegus pentagyna* Waldst. & Kit. ex Willd.**

A2 Bilecik: Pazaryeri, around Gümüşdere village, Hanyeri sırtı, north slopes, 850-900 m, 30.5.1999, ANES 6081-6082, Nph., Euro-Sib. el.

Crataegus orientalis* Pallas ex Bieb. var. *orientalis

B2 Bilecik: Bozüyük-Bilecik road, the turn to Pazaryeri village, north slopes, 660 m, 15.8.1999, ANES 6083-6084, Nph., Cosm.

Crataegus monogyna* Jacq. subsp. *monogyna

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 3 km, Düzyol hill, road edge, 910 m, 16.5.1999, ANES 6085-6094, Nph., Cosm.

Sorbus torminalis* (L.) Crantz var. *torminalis

A2 Bilecik: Pazaryeri, around Gümüşdere village, south slopes, 820 m, 18.7.1999, ANES 6095, Miph.

*** *Cydonia oblonga* Miller**

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 2 km, south slopes, 850 m, 1.8.1999, ANES 6096-6098, Miph., Nr., Cultivated.

Malus sylvestris* Miller subsp. *orientalis* (A. Uglitzk) Browicz var. *orientalis

A2 Bilecik: Pazaryeri, around Gümüşdere village, south slopes, 820 m, 18.7.1999, ANES 6099-6100, Miph.

Pyrus communis* L. subsp. *communis

A2 Bilecik: Pazaryeri, around Gümüşdere village, road edge, 800-950 m, 30.5.1999, ANES 6101-6104, Miph.

Pyrus elaeagnifolia* Pallas subsp. *elaeagnifolia

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 4 km, Around road repair station, north slopes, 920 m, 1.8.1999, ANES 6105-6108, Miph.

Lythraceae

***Lythrum salicaria* L.**

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 2 km, north slopes, 875 m, 4.7.1999, ANES 6109-6113, H., Euro-Sib. el.

Onagraceae

Epilobium hirsutum L.

A2 Bilecik: Pazaryeri, around Bahçesultan village, north slopes, 950 m, 4.7.1999, ANES 6114-6117, H., Cosm.

Epilobium montanum L.

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 2 km, north slopes, 875 m, 4.7.1999, ANES 6118, H., Euro-Sib. el.

Cucurbitaceae

Citrullus lanatus (Thunb.) Matsum & Nakai

B2 Bilecik: Bozüyük-Bilecik road, the turn to Pazaryeri village, field edge, 670 m, 24.10.1999, ANES 6121, T., Cultivated.

Cucurbita pepo L.

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 4 km, west slopes, field edge, 970 m, 24.10.1999, ANES 6122, T., Cultivated.

Crassulaceae

Sedum acre L.

A2 Bilecik: Pazaryeri, around Gümüşdere village, south slopes, 820 m, 18.7.1999, ANES 6123, H., Cosm.

Sedum pallidum Bieb. var. *bithynicum* (Boiss.) Chamberlain

A2 Bilecik: Pazaryeri, between Bahçesultan-Nazifpaşa villages, 2 km, south slopes, 950 m, 13.6.1999, ANES 6124-6215, Ch., Euxine el.

Apiaceae (Umbelliferae)

Astrantia maxima Pallas subsp. *haradjianii* (Grintz.) Rech. fil.

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 2 km, north slopes, 875 m, 4.7.1999, ANES 6126, Ch., End.

Eryngium campestre L. var. *virens* Link

A2 Bilecik: Pazaryeri, around Küçükmalı village, north slopes, 850-900 m, 30.5.1999, ANES 6127-6219, H., Cosm.

Scandix pecten-veneris L.

B2 Bilecik: Bozüyük-Bilecik road, the turn to Pazaryeri village, south slopes, 640-670 m, 14.5.2000, ANES 6130, T., Cosm.

Oenanthe pimpinelloides L.

A2 Bilecik: Pazaryeri, around Gümüşdere village, Hanyeri sırtı, north slopes, 850-900 m, 30.5.1999, ANES 6131-6133, H., Cosm.

Anethum graveolens L.

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 4 km, west slopes, field edge, 970 m, 24.10.1999, ANES 6134-6134, T., Cultivated.

Petroselinum crispum (Miller) A.W. Hill

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 4 km, west slopes, field edge, 970 m, 24.10.1999, ANES 6135, T., Cultivated.

Pastinaca sativa L. subsp. *urens* (Req. ex Godron) Çelak.

A2 Bilecik: Pazaryeri, around Gümüşdere village, road edge, 800-950 m, 30.5.1999, ANES 6136, H.

Tordylium maximum L.

A2 Bilecik: between Pazaryeri and Gümüşdere, Karagöztarla hill, south slopes, 780 m, 15.8.1999, ANES 6137-6138, H.

Torilis arvensis (Huds.) Link subsp. *arvensis*

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 2 km, north slopes, 875 m, 4.7.1999, ANES 6139, T.

Torilis leptophylla (L.) Reichb.

A2 Bilecik: Pazaryeri, between Bahçesultan-Nazifpaşa villages, 2 km, south slopes, 950 m, 13.6.1999, ANES 6140, T., Cosm.

Caucalis platycarpus L.

A2 Bursa: İnegöl, between Nazifpaşa-Kurşunlu villages, 10 km, west slopes, 740-750 m, 16.5.1999, ANES 6141-6142, T.

Turgenia latifolia (L.) Hoffm.

A2 Bilecik: Pazaryeri, around Gümüşdere village, Hanyeri sırtı, north slopes, 850-900 m, 30.5.1999, ANES 6143-6144, T., Cosm.

Orlaya daucooides (L.) Greuter

B2 Bilecik: Bozüyük-Bilecik road, the turn to Pazaryeri village, south slopes, 640-670 m, 14.5.2000, ANES 6145, T.

Daucus carota L.

A2 Bilecik: Pazaryeri, around Bahçesultan village, north slopes, 950 m, 4.7.1999, ANES 6146-6149, H., Cosm.

Daucus guttatus Sm.

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 5 km, Deveciyolu Hill, south slopes, 950 m, 18.7.1999, ANES 6150-6151, T.

Araliaceae

Hedera helix L.

A2 Bilecik: Pazaryeri, around Nazifpaşa village, road edge, 950 m, 26.3.2000, ANES 6152, Miph.

Caprifoliaceae

Sambucus ebulus L.

A2 Bilecik: Pazaryeri, around Gümüşdere village, Hanyeri sırtı, north slopes, 850-900 m, 30.5.1999, ANES 6153-6158, Ch., Euro-Sib. el.

* *Lonicera nummulariifolia* Jaub. & Spach subsp. *nummulariifolia*

B2 Bilecik: Bozüyük-Bilecik road, the turn to Pazaryeri village, south slopes, 640-670 m, 14.5.2000, ANES 6159, Nph., Nr.

Lonicera etrusca Santi var. *etrusca*

B2 Bilecik: Karaköy, Çömlekçi road, southwest slopes, 640 m, 14.5.2000, ANES 6160, Nph., Medit. el.

Valerianaceae***Valerianella coronata* (L.) DC.**

B2 Bilecik: Bozüyük-Bilecik road, the turn to Çamyayla village, south slopes, 640 m, 14.5.2000, ANES 6161-6162, T., Cosm.

Dipsacaceae***Dipsacus laciniatus* L.**

A2 Bilecik: Pazaryeri, around Gümüşdere village, Hanyeri sırtı, north slopes, 850-900 m, 30.5.1999, ANES 6163-6165, H., Cosm.

***Scabiosa atropurpurea* L. subsp. *maritima* (L.) Arc.**

A2 Bilecik: Pazaryeri, around Gümüşdere village, road edge, 870 m, 13.6.1999, ANES 6166-6170, H.

***Scabiosa argentea* L.**

A2 Bilecik: Pazaryeri, around Gümüşdere village, south slopes, 820 m, 18.7.1999, ANES 6171-6172, H., Cosm.

***Pteroccephalus plumosus* (L.) Coulter**

A2 Bilecik: Pazaryeri, Around Bahçesultan village, north slopes, 990 m, 13.6.1999, ANES 6173, T., Cosm.

Asteraceae (Compositae)***Helianthus annuus* L.**

A2 Bilecik: Between Pazaryeri and Gümüşdere, Karagöztarla Hill, south slopes, 780 m, 15.8.1999, ANES 6174, T., Cultivated.

***Xanthium spinosum* L.**

A2 Bilecik: Pazaryeri, around Küçükemalı village, road edge, 850 m, 15.8.1999, ANES 6175, T.

***Inula viscosa* (L.) Aiton**

A2 Bilecik: Pazaryeri, around Gümüşdere village, south slopes, 820 m, 15.8.1999, ANES 6176, G., Medit. el.

***Pulicaria dysenterica* (L.) Bernh.**

A2 Bilecik: Pazaryeri, around Gümüşdere village, south slopes, 820 m, 18.7.1999, ANES 6177-6179, Ch., Cosm.

***Filago pyramidata* L.**

A2 Bilecik: Pazaryeri, around Küçükemalı village, road edge, 850 m, 15.8.1999, ANES 6180, T., Cosm.

Solidago virgaurea* L. subsp. *virgaurea

B2 Bilecik: Bozüyük-Bilecik road, the turn to Pazaryeri village, north slopes, 660 m, 15.8.1999, ANES 6181, Ch.

Erigeron acer* L. subsp. *acer

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 2 km, south slopes, 850 m, 1.8.1999, ANES 6182-6183, H., Cosm.

***Conyza canadensis* (L.) Cronquist**

B2 Bilecik: Bozüyük-Bilecik road, the turn to Pazaryeri village, north slopes, 660 m, 15.8.1999, ANES 6184-6185, T.

***Bellis perennis* L.**

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 3 km, Devciyolu place, north-

west slopes, open field, 900-920 m, 16.5.1999, ANES 6186-6188, H., Euro-Sib. el.

***Doronicum orientale* Hoffm.**

B2 Bilecik: Bozüyük-Bilecik road, the turn to Çamyayla village, south slopes, 640 m, 14.5.2000, ANES 6189, G.

***Senecio vernalis* Waldst. & Kit.**

B2 Bilecik: Karaköy, Çömlekçi road, southwest slopes, 640 m, 14.5.2000, ANES 6190, T., Cosm.

***Tussilago farfara* L.**

A2 Bilecik: Pazaryeri, between Bahçesultan-Nazifpaşa villages, 3 km, road edge, 970 m, 4.7.1999, ANES 6191-6192, G., Euro-Sib. el.

***Calendula officinalis* L.**

B2 Bilecik: Bozüyük-Bilecik road, the turn to Pazaryeri village, field edge, 670 m, 24.10.1999, ANES 6193, H., Cultivated.

***Anthemis aciphylla* Boiss. var. *discoidea* Boiss.**

A2 Bilecik: Pazaryeri, between Bahçesultan-Nazifpaşa villages, 2 km, south slopes, 950 m, 13.6.1999, ANES 6194-6195, H., End., E. Medit. el.

***Anthemis cotula* L.**

A2 Bilecik: Pazaryeri, around Gümüşdere village, south slopes, 820 m, 18.7.1999, ANES 6196-6199, H., Cosm.

Anthemis tinctoria* L. var. *tinctoria

B2 Bursa: İnegöl, around Hamidabat village, road edge, 940 m, 30.5.1999, ANES 6200-6204, H., Cosm.

Achillea millefolium* L. subsp. *millefolium

A2 Bilecik: Pazaryeri, around Gümüşdere village, northwest slopes, 890 m, 13.6.1999, ANES 6205, H., Euro-Sib. el.

* ***Matricaria chamomilla* L. var. *recutita* (L.) Grieson**

B2 Bilecik: Bozüyük-Bilecik road, the turn to Çamyayla village, south slopes, 640 m, 14.5.2000, ANES 6213-6214, H., Nr.

***Tripleurospermum tenuifolium* (Kit.) Freyn**

A2 Bilecik: Pazaryeri, between Bahçesultan-Nazifpaşa villages, 2 km, south slopes, 950 m, 13.6.1999, ANES 6215-6217, H., Euro-Sib. el.

***Artemisia santonicum* L.**

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 4 km, Around road repair station, north slopes, 920 m, 1.8.1999, ANES 6218, T.

***Onopordum tauricum* Willd.**

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 2 km, south slopes, 850 m, 18.7.1999, ANES 6219, H., Euro-Sib. el.

***Cirsium ligulare* Boiss.**

A2 Bilecik: between Pazaryeri and Gümüşdere, Karagöztarla hill, south slopes, 780 m, 15.8.1999, ANES 6220-6221, H.

***Cirsium vulgare* (Savi) Ten.**

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 2 km, south slopes, 850 m, 1.8.1999, ANES 6222-6223, H., Cosm.

***Cirsium hypoleucum* DC.**

B2 Bursa: İnegöl, around Hamidabat village, road edge, 940 m, 30.5.1999, ANES 6224, H., Euxine el.

Cirsium creticum* (Lam) d'Urv. subsp. *creticum

A2 Bilecik: between Pazaryeri and Gümüşdere, Karagöztarla hill, south slopes, 780 m, 15.8.1999, ANES 6225-6226, H., E. Medit. el.

Cirsium arvense (L.) Scop. subsp. *vestitum* (Wimm. & Grab.) Petr.

A2 Bilecik: Pazaryeri, between Bahçesultan-Nazifpaşa villages, 2 km, south slopes, 950 m, 13.6.1999, ANES 6227-6230, H.

Carduus nutans L. subsp. *leiophyllus* (Petr.) Stoj. & Stef.

A2 Bilecik: Pazaryeri, around Gümüşdere village, northwest slopes, 890 m, 13.6.1999, ANES 6231-6232, H.

Carduus pycnocephalus L. subsp. *albidus* (Bieb.) Kazmi

A2 Bursa: İnegöl, around Kurşunlu village, road edge, 400 m, 16.5.1999, ANES 6233-6235, H., Cosm.

Jurinea consanguinea DC.

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages 5 km, Devciyolu hill, south slopes, 950 m, 18.7.1999, ANES 6236, H.

Centaurea olympica C.Koch

A2 Bursa: İnegöl, between Nazifpaşa-Kurşunlu villages, 5 km, Bakkaçukuru sırtı, north slopes, 900 m, 19.9.1999, ANES 6237, H., End.

Centaurea virgata Lam.

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 5 km, Devciyolu hill, south slopes, 950 m, 18.7.1999, ANES 6238, Ch., Ir.-Tur. el.

Centaurea diffusa Lam.

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 2 km, south slopes, 850 m, 18.7.1999, ANES 6239, H., Medit. el.

Centaurea solstitialis L. subsp. *solstitialis*

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 4 km, Around road repair station, north slopes, 920 m, 1.8.1999, ANES 6242-6244, T., Cosm.

Centaurea iberica Trev. ex. Spreng.

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 2 km, north slopes, 875 m, 4.7.1999, ANES 6245, H., Cosm.

Centaurea urvillei DC. subsp. *urvillei*

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 4 km, Around road repair station, north slopes, 920 m, 1.8.1999, ANES 6246, H., E. Medit. el.

Centaurea depressa Bieb.

A2 Bilecik: Pazaryeri, around Küçükmalı village, north slopes, 850-900 m, 30.5.1999, ANES 6247, T., Cosm.

Centaurea cyanus L.

A2 Bilecik: Pazaryeri, between Bahçesultan-Nazifpaşa villages, 2 km, south slopes, 950 m, 13.6.1999, ANES 6248-6249, T.

Crupina crupinastrum (Moris) Vis.

A2 Bilecik: Pazaryeri, between Bahçesultan-Nazifpaşa villages, 2 km, south slopes, 950 m, 13.6.1999, ANES 6250, T., Cosm.

Carthamus dentatus Vahl

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 2 km, north slopes, 875 m, 4.7.1999, ANES 6251-6252, H., Cosm.

Carlina corymbosa L.

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 2 km, south slopes, 850 m, 1.8.1999, ANES 6253-6254, H., Medit. el.

* *Carlina oligocephala* Boiss. & Kotschy subsp. *oligocephala*

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 2 km, south slopes, 850 m, 1.8.1999, ANES 6255, H., Nr.

Carlina lanata L.

A2 Bilecik: Pazaryeri, around Gümüşdere village, south slopes, 820 m, 15.8.1999, ANES 6256, T., Medit. el.

Xeranthemum annuum L.

A2 Bilecik: Pazaryeri, around Gümüşdere village, south slopes, 820 m, 18.7.1999, ANES 6257-6259, T., Cosm.

Xeranthemum cylindraceum Sm.

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 2 km, north slopes, 875 m, 4.7.1999, ANES 6260-6261, T.

Echinops ritro L.

A2 Bilecik: Pazaryeri, around Gümüşdere village, south slopes, 820 m, 18.7.1999, ANES 6262-6263, H.

Echinops viscosus DC. subsp. *bithynicus* (Boiss.) Rech.f.

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 5 km, Devciyolu hill, south slopes, 950 m, 18.7.1999, ANES 6264, H.

Scolymus hispanicus L.

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 2 km, south slopes, 850 m, 18.7.1999, ANES 6265, H., Medit. el.

Cichorium intybus L.

A2 Bilecik: Pazaryeri, around Bahçesultan village, north slopes, 950 m, 4.7.1999, ANES 6266-6271, Ch., Cosm.

Tragopogon longirostris Bisch. ex Sch.Bip. var. *longirostris*

B2 Bilecik: Bozüyük-Bilecik road, the turn to Pazaryeri village, south slopes, 640-670 m, 14.5.2000, ANES 6272, H., Cosm.

* *Tragopogon latifolius* Boiss. var. *angustifolius*

B2 Bursa: İnegöl, around Hamidabat village, road edge, 940 m, 30.5.1999, ANES 6273-6275, H., Ir.-Tur. el.

Leontodon asperimus (Willd.) J.Ball

A2 Bilecik: Pazaryeri, around Gümüşdere village, south slopes, 820 m, 18.7.1999, ANES 6276, H., Ir.-Tur. el.

Picris hieracioides L.

A2 Bilecik: Pazaryeri, between Bahçesultan-Nazifpaşa villages, 2 km, south slopes, 950 m, 13.6.1999, ANES 6277-6281, H., Euro-Sib. el.

* *Picris strigosa* Bieb.

A2 Bilecik: Pazaryeri, between Bahçesultan-Nazifpaşa villages, 2 km, south slopes, 950 m, 13.6.1999, ANES 6282, H., Nr., Ir.-Tur. el.

Sonchus asper (L.) Hill subsp. *glaucescens* (Jordan) Ball

A2 Bilecik: Pazaryeri, around Nazifpaşa village, south slopes, 950 m, 13.6.1999, ANES 6283, T., Cosm.

Pilosella hoppeana (Schult.) C.H. & F.W. Schultz subsp. *lydia* (Bornm. & Zahn) Sell & West

A2 Bilecik: Pazaryeri, around Bahçesultan village, north slopes, 990 m, 13.6.1999, ANES 6284-6286, H., End.

Pilosella piloselloides (Vill.) Soják subsp. *megalomastix* (NP.) Sell & West

A2 Bursa: İnegöl, between Nazifpaşa and Kurşunlu villages, 7 km, road edge, 750-760 m, 16.5.1999, ANES 6287-6289, H., Cosm.

Lactuca serriola L.

B2 Bilecik: Bozüyük-Bilecik road, the turn to Pazaryeri village, north slopes, 660 m, 15.8.1999, ANES 6290-6292, H., Euro-Sib. el.

Scariola viminea (L.) F.W. Schmidt

B2 Bilecik: Bozüyük-Bilecik road, the turn to Pazaryeri village, north slopes, 660 m, 1.8.1999, ANES 6293-6296, H., Cosm.

Lapsana communis L. subsp. *intermedia* (Bieb.) Hayek

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 5 km, road edge, 950 m, 16.5.1999, ANES 6297-6300, H., Cosm.

Taraxacum serotinum (Waldst. & Kit.) Poir.

A2 Bilecik: Pazaryeri, around Gümüşdere village, Çatalmeşe Hill, east slopes, 820-850 m, 15.8.1999, ANES 6301-6302, H., Cosm.

Taraxacum officinale Weber

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 2 km, south slopes, 850 m, 18.7.1999, ANES 6303-6304, H.

Chondrilla juncea L. var. *juncea*

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 2 km, south slopes, 850 m, 1.8.1999, ANES 6305-6306, H., Cosm.

Crepis foetida L. subsp. *rhoeadifolia* (Bieb.) Çelak.

A2 Bilecik: Pazaryeri, around Gümüşdere village, south slopes, 820 m, 18.7.1999, ANES 6307-6309, T., Cosm.

Campanulaceae

Campanula lyrata Lam. subsp. *lyrata*

A2 Bilecik: Pazaryeri, between Bahçesultan and Nazifpaşa villages, 2 km, south slopes, 950 m, 13.6.1999, ANES 6310-6311, H., End.

Campanula rapunculoides L. subsp. *cordifolia* (C.Koch) Damboldt

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 2 km, north slopes, 875 m, 4.7.1999, ANES 6312-6314, H.

Campanula glomerata L. subsp. *hispida* (Witasek) Hayek

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 2 km, north slopes, 875 m, 4.7.1999, ANES 6315-6316, H., Euro-Sib. el.

Asyneuma limonifolium (L.) Janch. subsp. *limonifolium*

A2 Bilecik: Pazaryeri, around Gümüşdere village, south slopes, 820 m, 18.7.1999, ANES 6317-6318, H., Cosm.

Legousia speculum-veneris (L.) Chaix

A2 Bilecik: Pazaryeri, around Küçükelmali village, road edge, 850-900 m, 30.5.1999, ANES 6319-6322, T., Medit. el.

Primulaceae

Primula vulgaris Huds. subsp. *vulgaris*

A2 Bilecik: Pazaryeri, between Nazifpaşa and Kurşunlu villages, 3 km, north slopes, 950 m, 26.3.2000, ANES 6323, G., Euro-Sib. el.

Cyclamen coum Mill. var. *coum*

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 4 km, north slopes, under the *Quercus* forest, 970 m, 24.10.1999, ANES 6324-6326, G.

Lysimachia verticillaris Spreng.

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 2 km, north slopes, 875 m, 4.7.1999, ANES 6327, Ch., Hyrcano-Euxine el.

Lysimachia atropurpurea L.

A2 Bilecik: Pazaryeri, between Bahçesultan and Nazifpaşa villages, 2 km, south slopes, 950 m, 13.6.1999, ANES 6328-6329, Ch., E. Medit. el.

* *Anagallis arvensis* L. var. *arvensis*

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 5 km, road edge, 950 m, 16.5.1999, ANES 6330-6335, T., Nr.

Anagallis foemina Miller

A2 Bilecik: Pazaryeri, Between Gümüşdere and Bahçesultan villages 2. Km, south slopes, 850 m, 18.7.1999, ANES 6336-6337, T., Medit. el.

Oleaceae

Jasminum fruticans L.

B2 Bilecik: Bozüyük-Bilecik road, The turn to Pazaryeri village, north slopes, 660 m, 15.8.1999, ANES 6338, Nph., Medit. el.

Fraxinus angustifolia Vahl subsp. *angustifolia*

B2 Bilecik: Karaköy, Çömlekçi road, southwest slopes, 640 m, 14.5.2000, ANES 6339, Mph.

Ligustrum vulgare L.

B2 Bilecik: Bozüyük-Bilecik road, the turn to Pazaryeri village, north slopes, 660 m, 15.8.1999, ANES 6340, Nph., Euro-Sib. el.

Gentianaceae

Centaurium erythraea Rafn. subsp. *turcicum* (Velen.) Melderis

A2 Bilecik: Pazaryeri, around Gümüşdere village, south slopes, 820 m, 18.7.1999, ANES 6341-6342, H., Cosm.

Convolvulaceae

Convolvulus lineatus L.

A2 Bilecik: Pazaryeri, between Bahçesultan and Nazifpaşa villages, 2 km, south slopes, 950 m, 13.6.1999, ANES 6343, H., Cosm.

Convolvulus holosericeus* Bieb. subsp. *holosericeus

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 5 km, Devciyolu hill, south slopes, 950 m, 18.7.1999, ANES 6344, H.

***Convolvulus arvensis* L.**

A2 Bursa: İnegöl, between Nazifpaşa and Kurşunlu villages, 11 km, road edge, 710 m, 16.5.1999, ANES 6345-6350, H., Cosm.

Boraginaceae***Heliotropium europaeum* L.**

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 4 km, Around road repair station, north slopes, 920 m, 1.8.1999, ANES 6351-6352, T.

***Lappula barbata* (Bieb.) Gürke**

B2 Bilecik: Bozüyük-Bilecik road, the turn to Pazaryeri village, south slopes, 640-670 m, 14.5.2000, ANES 6353, H., Ir.-Tur. el.

Myosotis ramosissima* Rochel ex Schult. subsp. *ramosissima

A2 Bilecik: Pazaryeri, around Küçükemal village, north slopes, 850-900 m, 30.5.1999, ANES 6354-6356, T.

***Myosotis lithospermifolia* (Willd.) Horn**

B2 Bilecik: Karaköy, Çömlekçi road, southwest slopes, 640 m, 14.5.2000, ANES 6357, H.

***Cynoglossum creticum* Mill.**

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 5 km, road edge, 950 m, 16.5.1999, ANES 6358-6362, H.

***Lithospermum purpurocaeruleum* L.**

B2 Bursa: İnegöl, around Hamidabat village, road edge, 940 m, 30.5.1999, ANES 6363, G., Euro-Sib. el.

***Buglossoides arvensis* (L.) Johnst.**

A2 Bilecik: Pazaryeri, around Küçükemal village, north slopes, 850-900 m, 30.5.1999, ANES 6364-6366, T., Cosm.

***Echium italicum* L.**

A2 Bilecik: Pazaryeri, around Gümüşdere village, Hanyeri sırtı, north slopes, 850-900 m, 30.5.1999, ANES 6367-6371, H.

***Echium vulgare* L.**

A2 Bilecik: Pazaryeri, between Bahçesultan and Nazifpaşa villages, 2 km, south slopes, 950 m, 13.6.1999, ANES 6372-6373, H., Euro-Sib. el.

Onosma tauricum* Pall. ex Willd. var. *tauricum

B2 Bilecik: Bozüyük-Bilecik road, the turn to Çamyayla village, south slopes, 640 m, 14.5.2000, ANES 6374-6375, H.

***Onosma bornmuelleri* Hausskn.**

A2 Bilecik: Pazaryeri, around Bahçesultan village, north slopes, 990 m, 13.6.1999, ANES 6376, H., End.

***Cerintho minor* L. subsp. *auriculata* (Ten.) Domac**

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 4 km, Around road repair station, north slopes, 920 m, 1.8.1999, ANES 6377, H., Cosm.

***Trachystemon orientalis* (L.) G. Don**

B2 Bursa: İnegöl, around Hamidabat village, road edge, 940 m, 30.5.1999, ANES 6378-6379, G., Euxine el.

***Anchusa undulata* L. subsp. *hybrida* (Ten.) Cout.**

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 3 km, Devciyolu place, north-west slopes, open field, 900-920 m, 16.5.1999, ANES 6380-6386, H., Medit. el.

Anchusa azurea* Mill. var. *azurea

A2 Bilecik: Pazaryeri, around Küçükemal village, north slopes, 850-900 m, 30.5.1999, ANES 6387-6389, H., Cosm.

*** *Anchusa stylosa* Bieb.**

A2 Bilecik: Pazaryeri, around Küçükemal village, north slopes, 850-900 m, 30.5.1999, ANES 6390-6392, T.

*** *Alkanna orientalis* (L.) Boiss. var. *leucantha* (Bornm.) Hub.-Mor.**

B2 Bilecik: Bozüyük-Bilecik road, the turn to Pazaryeri village, south slopes, 640-670 m, 14.5.2000, ANES 6393, H., Nr., End., Ir.-Tur. el.

Solanaceae*** *Solanum nigrum* L. subsp. *nigrum***

B2 Bilecik: Bozüyük-Bilecik road, the turn to Pazaryeri village, field edge, 670 m, 24.10.1999, ANES 6394-6395, T., Cosm.

***Capsicum annuum* L.**

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 4 km, west slopes, field edge, 970 m, 24.10.1999, ANES 6396, T., Cultivated.

***Lycopersicon esculentum* Mill.**

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 4 km, Around road repair station, north slopes, 920 m, 1.8.1999, ANES 6397-6398, T., Cultivated.

Scrophulariaceae***Verbascum blattaria* L.**

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages 2. Km, south slopes, 850 m, 1.8.1999, ANES 6399, Ch., Cosm.

***Verbascum phlomoides* L.**

A2 Bursa: İnegöl, between Nazifpaşa and Kurşunlu villages, 7 km, road edge, 750-760 m, 16.5.1999, ANES 6400, Ch., Euro-Sib. el.

*** *Verbascum mucronatum* Lam.**

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 4 m, road edge, 920 m, 1.8.1999, ANES 6401, K., Nr., E. Medit. el.

***Verbascum glomeratum* Boiss.**

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 2 km, north slopes, 875 m, 4.7.1999, ANES 6402, Ch., Ir.-Tur. el.

***Verbascum cheiranthifolium* Boiss. var. *asperulum* (Boiss.) Murb.**

A2 Bilecik: Pazaryeri, around Nazifpaşa village, south slopes, 950 m, 13.6.1999, ANES 6403-6404, H., End.

Scrophularia scopolii* Hoppe ex Pers. var. *scopolii

A2 Bilecik: Pazaryeri, around Gümüşdere village, Hanyeri sırtı, north slopes, 850-900 m, 30.5.1999, ANES 6405, H., Cosm.

Scrophularia xanthoglossa Boiss. var. *deciapiens* (Boiss. & Kotschy) Boiss.

B2 Bursa: İnegöl, around Hamidabat village, road edge, 940 m, 30.5.1999, ANES 6406-6407, H., Ir.-Tur. el.

Kickxia elatine (L.) Dumort. subsp. *crinita* (Mabille) Greuter

A2 Bilecik: Pazaryeri, around Gümüşdere vil- lage, north slopes, 870-910 m, 19.9.1999, ANES 6408-6409, T.

* **Kickxia spuria** (L.) Dumort. subsp. *integrifolia* (Brot.) R.Fern.

A2 Bilecik: Pazaryeri, Around Gümüşdere vil- lage, Çatalmeşe Hill, east slopes, 820-850 m, 15.8.1999, ANES 6410, T., Nr.

Digitalis ferruginea L. subsp. *ferruginea*

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 5 km, Deveciyolu hill, south slopes, 950 m, 18.7.1999, ANES 6411-6412, H., Euro- Sib. el.

Veronica grisebachii S.M. Walters

B2 Bilecik: Karaköy, Çömlekçi road, southwest slopes, 640 m, 14.5.2000, ANES 6413, H., E. Medit. el.

Veronica persica Poir.

A2 Bilecik: Pazaryeri, around Bahçesultan vil- lage, north slopes, 990 m, 13.6.1999, ANES 6414-6415, T., Cosm.

Veronica anagallis-aquatica L.

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 3 km, Deveciyolu place, north slopes, near Gümüş stream, 800 m, 4.7.1999, ANES 6416-6417, H., Cosm.

Veronica chamaedrys L.

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 3 km, Deveciyolu place, north- west slopes, open field, 900-920 m, 16.5.1999, ANES 6418-6420, H., Euro-Sib. el.

Veronica pectinata L. var. *pectinata*

B2 Bilecik: Bozüyük-Bilecik road, the turn to Çamyayla village, south slopes, 640 m, 14.5.2000, ANES 6421, H.

Veronica multifida L.

A2 Bilecik: Pazaryeri, between Nazifpaşa- Kurşunlu villages, 2 km, road edge, 900 m, 16.5.1999, ANES 6422-6423, H., End., Ir.-Tur. el.

Odontites verna (Bellardi) Dumort. subsp. *serotina* (Dumort.) Corb.

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 2 km, south slopes, 850 m, 1.8.1999, ANES 6424-6427, H., Euro-Sib. el.

Parentucellia latifolia (L.) Caruel subsp. *latifolia*

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 3 km, Deveciyolu place, north- west slopes, open field, 900-920 m, 16.5.1999, ANES 6428-6429, T., Medit. el.

Orobanchaceae

Orobanche elatior Sutton

A2 Bilecik: Pazaryeri, around Bahçesultan vil- lage, north slopes, 990 m, 13.6.1999, ANES 6430, VP.

Acanthaceae

Acanthus hirsutus Boiss.

A2 Bilecik: between Pazaryeri and Gümüşdere, Karagöztarla hill, south slopes, 780 m, 15.8.1999, ANES 6431, H., End.

Globulariaceae

Globularia trichosantha J.C.Fisch. & G.Mey.

B2 Bilecik: Bozüyük-Bilecik road, the turn to Çamyayla village, south slopes, 640 m, 14.5.2000, ANES 6432, Ch., Cosm.

Verbenaceae

Verbena officinalis L.

A2 Bilecik: Pazaryeri, around Gümüşdere vil- lage, south slopes, 820 m, 18.7.1999, ANES 6433-6436, H., Cosm.

Lamiaceae (Labiatae)

Ajuga chamaepitys (L.) Schreb. subsp. *chia* var. *chia*

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 4 km, Around road repair station, north slopes, 920 m, 1.8.1999, ANES 6437-6439, H., Cosm.

Teucrium scordium L. subsp. *scordioides* (Schreb.) Maire & Petitm.

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 2 km, south slopes, 850 m, 1.8.1999, ANES 6440, H., Euro-Sib. el.

Teucrium chamaedrys L. subsp. *chamaedrys*

A2 Bilecik: Pazaryeri, between Bahçesultan- Nazifpaşa villages, 2 km, south slopes, 950 m, 13.6.1999, ANES 6441-6444, H., Euro-Sib. el.

Teucrium polium L.

A2 Bilecik: Pazaryeri, around Gümüşdere vil- lage, south slopes, 820 m, 18.7.1999, ANES 6445-6446, Ch., Cosm.

Teucrium lamifolium d'Urv. subsp. *lamifolium*

A2 Bilecik: Pazaryeri, around Bahçesultan vil- lage, north slopes, 950 m, 4.7.1999, ANES 6447-6448, H.

* **Scutellaria rubicunda** Hornem. subsp. *subvelutina* (Rech.f.) Edmondston

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 2 km, north slopes, 875 m, 4.7.1999, ANES 6449, H., Nr., E. Medit. el.

* **Phlomis russeliana** (Sims) Benth

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 5 km, Deveciyolu hill, south slopes, 950 m, 18.7.1999, ANES 6450, Ch., Nr.

Lamium amplexicaule L.

B2 Bilecik: Karaköy, Çömlekçi road, southwest slopes, 640 m, 14.5.2000, ANES 6451-6452, T., Euro- Sib. el.

* **Lamium purpureum** L. var. *purpureum*

B2 Bilecik: Bozüyük-Bilecik road, the turn to Pazaryeri village, south slopes, 640-670 m, 14.5.2000, ANES 6453, T., Nr., Euro-Sib. el.

Sideritis montana L. subsp. *montana*

A2 Bilecik: Pazaryeri, between Bahçesultan-Nazıfpaşa villages, 2 km, south slopes, 950 m, 13.6.1999, ANES 6454-6455, T., Medit. el.

Stachys byzantina C.Koch

B2 Bursa: İnegöl, around Hamidabat village, road edge, 940 m, 30.5.1999, ANES 6456-6463, H., Euro-Sib. el.

Stachys annua (L.) L. subsp. *annua* var. *lycaonica* Bhattacharjee

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 5 km, road edge, 950 m, 16.5.1999, ANES 6464-6465, H., Ir.-Tur. el.

Prunella vulgaris L.

A2 Bilecik: Pazaryeri, between Bahçesultan and Nazıfpaşa villages, 2 km, south slopes, 950 m, 13.6.1999, ANES 6466-6477, H., Euro-Sib. el.

Calamintha nepeta (L.) Savi subsp. *glandulosa* (Req.) P.W.Ball

B2 Bilecik: Bozüyük-Bilecik road, the turn to Pazaryeri village, north slopes, 660 m, 15.8.1999, ANES 6468-6470, H.

Clinopodium vulgare L. subsp. *arundanum* (Boiss.) Nyman

A2 Bilecik: Pazaryeri, around Bahçesultan village, north slopes, 950 m, 4.7.1999, ANES 6471-6472, H., Cosm.

Acinos rotundifolius Pers.

A2 Bilecik: Pazaryeri, between Bahçesultan and Nazıfpaşa villages, 2 km, south slopes, 950 m, 13.6.1999, ANES 6473-6475, T., Cosm.

Thymus longicaulis C. Presl subsp. *longicaulis* var. *subisophyllus* (Borbás) Jalas

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 3 km, Devciyolu place, north slopes, near Gümüş stream, 890 m, 16.5.1999, ANES 6476-6480, Ch.

Mentha pulegium L.

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 2 km, south slopes, 850 m, 1.8.1999, ANES 6481, G.

Mentha longifolia (L.) Huds. subsp. *thyphoides* (Briq.) Harley var. *thyphoides*

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 5 km, Devciyolu hill, south slopes, 950 m, 18.7.1999, ANES 6482-6485, H., Cosm.

Mentha spicata L. subsp. *spicata*

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 2 km, north slopes, 875 m, 4.7.1999, ANES 6486-6487, H.

Ziziphora capitata L.

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 2 km, south slopes, 850 m, 18.7.1999, ANES 6488, T., Ir.-Tur. el.

Salvia tomentosa J.M.Mill.

A2 Bilecik: Pazaryeri, around Bahçesultan village, north slopes, 950 m, 4.7.1999, ANES 6489, H., Medit. el.

Salvia sclarea L.

A2 Bilecik: Pazaryeri, around Gümüşdere village, northwest slopes, 890 m, 13.6.1999, ANES 6490, H., Cosm.

Salvia aethiopsis L.

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 5 km, Devciyolu hill, south slopes, 950 m, 18.7.1999, ANES 6491-6492, H.

Salvia forskahlei L.

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 2 km, north slopes, 875 m, 4.7.1999, ANES 6493-6497, H., Euxine el.

Salvia virgata J.Jacq.

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 3 km, Devciyolu place, north-west slopes, open field, 900-920 m, 16.5.1999, ANES 6498-6502, H., Ir.-Tur. el.

* ***Salvia dichroantha*** Stapf

A2 Bilecik: Pazaryeri, around Bahçesultan village, north slopes, 950 m, 4.7.1999, ANES 6503-6505, H., Nr., End., Ir.-Tur. el.

Plumbaginaceae

* ***Plumbago europaea*** L.

B2 Bilecik: Bozüyük-Bilecik road, the turn to Pazaryeri village, north slopes, 660 m, 15.8.1999, ANES 6506-6507, Ch., Euro-Sib. el.

Plantaginaceae

Plantago major L. subsp. *major* L.

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 2 km, south slopes, 850 m, 1.8.1999, ANES 6508, H., Cosm.

Thymelaeaceae

Daphne pontica L.

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 2 km, north slopes, 875 m, 24.10.1999, ANES 6509-6510, Nph., Euxine el.

Thymelaea passerina (L.) Coss. & Germ.

A2 Bilecik: Pazaryeri, around Gümüşdere village, Çatalmeşe hill, east slopes, 820-850 m, 15.8.1999, ANES 6511, H., Cosm.

Elaeagnaceae

Elaeagnus angustifolia L.

A2 Bilecik: Pazaryeri, around Bahçesultan village, road edge, 940-950 m, 30.5.1999, ANES 6512, Miph., Cosm.

Santalaceae

Thesium arvense Horv.

A2 Bilecik: Pazaryeri, around Gümüşdere village, north slopes, 870-910 m, 19.9.1999, ANES 6513, H., Euro-Sib. el.

Loranthaceae

Viscum album L. subsp. *album*

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 5 km, road edge, on *Quercus cerris*, 950 m, 18.7.1999, ANES 6514-6515, VP.

Euphorbiaceae***Euphorbia stricta* L.**

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 3 km, Deveciyolu place, north slopes, near Gümüş stream, 890 m, 16.5.1999, ANES 6516-6523, T., Euro-Sib. el.

*** *Euphorbia helioscopia* L.**

B2 Bilecik: Bozüyük-Bilecik road, the turn to Çamyayla village, south slopes, 640 m, 14.5.2000, ANES 6524-6525, T., Nr., Cosm.

***Euphorbia falcata* L. subsp. *macrostegia* (Bornm.) O.Schwarz**

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 5 km, Deveciyolu hill, south slopes, 950 m, 18.7.1999, ANES 6526-6527, H., End., E. Medit. el.

Euphorbia anacampseros* Boiss. var. *anacampseros

B2 Bilecik: Bozüyük-Bilecik road, the turn to Çamyayla village, south slopes, 640 m, 14.5.2000, ANES 6528-6529, H., End.

Euphorbia amygdaloides* L. var. *amygdaloides

B2 Bursa: İnegöl, around Hamidabat village, road edge, 940 m, 30.5.1999, ANES 6530, H., Euro-Sib. el.

Urticaceae***Urtica dioica* L.**

B2 Bursa: İnegöl, around Hamidabat village, road edge, 940 m, 30.5.1999, ANES 6531-6532, H., Euro-Sib. el.

Cannabaceae*** *Humulus lupulus* L.**

B2 Bilecik: Bozüyük-Bilecik road, the turn to Pazaryeri village, north slopes, 660 m, 1.8.1999, ANES 6533-6534, H., Euro-Sib. el.

Moraceae***Morus alba* L.**

B2 Bilecik: Bozüyük-Bilecik road, the turn to Pazaryeri village, north slopes, 660 m, 15.8.1999, ANES 6535, Miph., Cosm., Cultivated.

Juglandaceae***Juglans regia* L.**

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 4 km, road edge, 920 m, 1.8.1999, ANES 6536, Mph., Cosm.

Platanaceae***Platanus orientalis* L.**

A2 Bilecik: between Pazaryeri and Gümüşdere villages, Beyçayırı place, road edge, 650 m, 1.8.1999, ANES 6537-6538, Mph., Cosm.

Fagaceae***Fagus orientalis* Lipsky**

B2 Bursa: İnegöl, around Hamidabat village, road edge, 940 m, 30.5.1999, ANES 6539-6540, Mph., Euro-Sib. el.

***Quercus petraea* (Matt.) Liebl. subsp. *iberica* (Steven ex Bieb.) Krassiln.**

A2 Bilecik: Pazaryeri, between Bahçesultan and Nazıfpaşa villages, 2 km, south slopes, 950 m, 13.6.1999, ANES 6541-6542, Miph.

***Quercus pubescens* Willd.**

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 4 km, Around road repair station, north slopes, 920 m, 1.8.1999, ANES 6543-6545, Miph.

Quercus cerris* L. var. *cerris

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 2 km, road edge, 840 m, 16.5.1999, ANES 6546-6553, Miph.

Coryllaceae***Carpinus betulus* L.**

B2 Bursa: İnegöl, around Hamidabat village, road edge, 940 m, 30.5.1999, ANES 6554-6555, Miph., Euro-Sib. el.

Salicaceae***Salix alba* L.**

A2 Bilecik: Pazaryeri, around Gümüşdere village, road edge, 800-950 m, 30.5.1999, ANES 6556-6559, Miph., Euro-Sib. el.

***Populus tremula* L.**

B2 Bursa: İnegöl, around Hamidabat village, road edge, 940 m, 30.5.1999, ANES 6560-6561, Mph., Euro-Sib. el.

*** *Populus nigra* L. subsp. *nigra***

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 4 km, Around road repair station, north slopes, 920 m, 1.8.1999, ANES 6562, Mph., Nr.

Rubiaceae***Asperula tenella* Heuffel ex Degen**

A2 Bilecik: Pazaryeri, around Gümüşdere village, south slopes, 820 m, 18.7.1999, ANES 6563, Ch.

***Asperula involucreta* Wahlenb.**

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 3 km, Deveciyolu place, north-west slopes, open field, 900-920 m, 16.5.1999, ANES 6564-6567, Ch., Euxine el.

*** *Asperula arvensis* L.**

A2 Bilecik: Pazaryeri, around Küçükelmali village, north slopes, 850-900 m, 30.5.1999, ANES 6568-6570, H., Nr., Medit. el.

Galium verum* L. subsp. *verum

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 3 km, Deveciyolu place, north-west slopes, open field, 900-920 m, 16.5.1999, ANES 6571-6574, H., Euro-Sib. el.

***Galium subuliferum* Somm & Lev.**

A2 Bilecik: Pazaryeri, around Gümüşdere vil-
lage, Hanyeri sırtı, northwest slopes, 910 m,
16.5.1999, ANES 6575-6577, H.

***Galium aparine* L.**

A2 Bilecik: Pazaryeri, around Gümüşdere vil-
lage, Hanyeri sırtı, north slopes, 850-900 m,
30.5.1999, ANES 6578-6581, H.

***Cruciata taurica* (Pallas ex Willd.) Ehrend.**

B2 Bilecik: Bozüyük-Bilecik road, the turn to
Pazaryeri village, south slopes, 640-670 m, 14.5.2000,
ANES 6582, Ch., Ir.-Tur. el.

Monocotyledonae

Araceae

***Arum elongatum* Steven subsp. *detruncatum*
(C.A.Mey. ex Schott) H. Riedl**

A2 Bilecik: Pazaryeri, between Gümüşdere and
Bahçesultan villages, 2 km, south slopes, 850 m,
18.7.1999, ANES 6583-6584, G., Ir.-Tur. el.

Liliaceae

***Asphodeline lutea* (L.) Reichb.**

B2 Bilecik: Bozüyük-Bilecik road, the turn to
Pazaryeri village, south slopes, 640-670 m, 14.5.2000,
ANES 6585, G., Medit. el.

***Allium atroviolaceum* Boiss.**

A2 Bilecik: Pazaryeri, between Gümüşdere and
Bahçesultan villages, 2 km, south slopes, 850 m,
18.7.1999, ANES 6586, G., Cosm.

***Allium scorodoprasum* L. subsp. *rotundum* (L.)
Stearn**

A2 Bilecik: Pazaryeri, between Gümüşdere and
Bahçesultan villages, 4 km, Around road repair station,
north slopes, 920 m, 1.8.1999, ANES 6587, G., Medit.
el.

***Scilla autumnalis* L.**

A2 Bilecik: Pazaryeri, around Küçükmalı vil-
lage, road edge, 850 m, 15.8.1999, ANES 6588-6590,
G., Medit. el.

***Ornithogalum pyrenaicum* L.**

A2 Bilecik: Pazaryeri, around Gümüşdere vil-
lage, Hanyeri sırtı, north slopes, 850-900 m,
30.5.1999, ANES 6591-6592, G.

***Ornithogalum montanum* Cyr.**

B2 Bilecik: Bozüyük-Bilecik road, the turn to
Çamyayla village, south slopes, 640 m, 14.5.2000,
ANES 6593, G., E. Medit. el.

***Ornithogalum comosum* L.**

A2 Bilecik: Pazaryeri, between Bahçesultan and
Nazıfpaşa villages, 3 km, road edge, 970 m, 4.7.1999,
ANES 6594, G., Cosm.

***Ornithogalum armeniacum* Baker**

B2 Bilecik: Karaköy, Çömlekçi road, southwest
slopes, 640 m, 14.5.2000, ANES 6595-6596, G., E.
Medit. el.

***Muscari comosum* (L.) Miller**

A2 Bilecik: Pazaryeri, between Bahçesultan and
Nazıfpaşa villages, 2 km, south slopes, 950 m,
13.6.1999, ANES 6597-6598, G., Medit. el.

***Muscari armeniacum* Leichtlin ex Baker**

B2 Bilecik: Bozüyük-Bilecik road, the turn to
Pazaryeri village, south slopes, 640-670 m, 14.5.2000,
ANES 6599, G., Cosm.

***Muscari neglectum* Guss.**

A2 Bilecik: Pazaryeri, around Gümüşdere vil-
lage, Hanyeri sırtı, north slopes, 850-900 m,
30.5.1999, ANES 6600-6602, G., Cosm.

***Gagea granatellii* (Parl.) Parl.**

A2 Bilecik: Pazaryeri, between Nazıfpaşa-
Kurşunlu villages, 3 km, north slopes, 950 m,
26.3.2000, ANES 6603, G., Medit. el.

***Colchicum umbrosum* Steven**

A2 Bilecik: Pazaryeri, around Gümüşdere vil-
lage, north slopes, 870-910 m, 19.9.1999, ANES 6604,
G., Euxine el.

*** *Colchicum bornmuelleri* Freyn**

A2 Bilecik: Pazaryeri, around Gümüşdere vil-
lage, north slopes, 870-910 m, 19.9.1999, ANES 6605,
G., Nr., End., Euxine el.

Amaryllidaceae

***Galanthus elwesii* Hook.f.**

A2 Bilecik: Pazaryeri, around Bahçesultan vil-
lage, road edge, 940-950 m, 26.3.2000, ANES 6606,
G., E. Medit. el.

Iridaceae

***Iris schachtii* Markgr.**

B2 Bilecik: Bozüyük-Bilecik road, the turn to
Pazaryeri village, south slopes, 640-670 m, 14.5.2000,
ANES 6607, G., End., Ir.-Tur. el.

***Crocus chrysanthus* (Herb.) Herb.**

A2 Bilecik: Pazaryeri, around Bahçesultan vil-
lage, north slopes, 950 m, 26.3.2000, ANES 6608, G.

***Crocus biflorus* Miller subsp. *pulchricolor* (Herb.)
Mathew**

A2 Bilecik: Pazaryeri, around Gümüşdere vil-
lage, south slopes, 820 m, 26.3.2000, ANES 6609-
6610, G., End., Euro-Sib. el.

Orchidaceae

***Cephalanthera rubra* (L.) L.C.M. Rich.**

B2 Bursa: İnegöl, around Hamidabat village,
road edge, 940 m, 30.5.1999, ANES 6611, G.
Cosm.

***Anacamptis pyramidalis* (L.) L.C.M Richard**

A2 Bilecik: Pazaryeri, around Gümüşdere vil-
lage, south slopes, 820 m, 18.7.1999, ANES 6612, G.,
Cosm.

***Orchis tridentata* Scop.**

B2 Bilecik: Bozüyük-Bilecik road, the turn to
Pazaryeri village, south slopes, 640-670 m, 14.5.2000,
ANES 6613, G., Medit. el.

***Orchis mascula* (L.) L. subsp. *pinetorum* (Boiss.
& Kotschy) G. Camus**

A2 Bilecik: Pazaryeri, between Gümüşdere and
Bahçesultan villages, 2 km, south slopes, 850 m,
1.8.1999, ANES 6614, G., E. Medit. el.

Juncaceae***Juncus inflexus* L.**

A2 Bilecik: Pazaryeri, between Bahçesultan and Nazıfpaşa villages, 3 km, road edge, 970 m, 4.7.1999, ANES 6615, G., Cosm.

***Juncus effusus* L.**

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 4 km, Around road repair station, north slopes, 920 m, 1.8.1999, ANES 6616, T.

***Juncus articulatus* L.**

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 2 km, north slopes, 875 m, 4.7.1999, ANES 6617, T., Euro-Sib. el.

Cyperaceae***Scirpoides holoschoenus* (L.) Soják.**

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 2 km, south slopes, 850 m, 18.7.1999, ANES 6618, T., Cosm.

***Carex spicata* Huds.**

A2 Bilecik: Pazaryeri, around Bahçesultan village, north slopes, 990 m, 13.6.1999, ANES 6619, G., Euro-Sib. el.

***Carex pendula* Huds.**

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 2 km, south slopes, 850 m, 1.8.1999, ANES 6620, G., Euro-Sib. el.

***Carex flacca* Schreb. subsp. *serrulata* (Biv.) Greuter**

A2 Bilecik: Pazaryeri, around Gümüşdere village, Hanyeri sırtı, north slopes, 850-900 m, 30.5.1999, ANES 6621-6622, G., Medit. el.

Poaceae (Gramineae)***Brachypodium sylvaticum* (Huds.) P. Beauv.**

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 5 km, Devciyolu hill, south slopes, 950 m, 18.7.1999, ANES 6623-6624, H., Euro-Sib. el.

*** *Agropyron cristatum* (L.) Gaertn. subsp. *pectinatum* (Bieb.) Tzvelev var. *pectinatum***

B2 Bilecik: Bozüyük-Bilecik road, the turn to Pazaryeri village, north slopes, 660 m, 15.8.1999, ANES 6625-6626, H., Nr.

***Aegilops markgrafii* (Greuter) S.Hammer**

A2 Bilecik: Pazaryeri, between Bahçesultan and Nazıfpaşa villages, 2 km, south slopes, 950 m, 13.6.1999, ANES 6627, T., E. Medit. el.

***Aegilops geniculata* Roth**

A2 Bilecik: Pazaryeri, around Küçükemalı village, north slopes, 850-900 m, 30.5.1999, ANES 6628-6629, T., Medit. el.

***Triticum aestivum* L.**

A2 Bilecik: Pazaryeri, between Bahçesultan and Nazıfpaşa villages, 2 km, south slopes, 950 m, 13.6.1999, ANES 6630-6634, T., Cosm., Cultivated.

***Hordeum geniculatum* All.**

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 2 km, north slopes, 875 m, 4.7.1999, ANES 6635, H., Euro-Sib. el.

***Hordeum bulbosum* L.**

B2 Bursa: İnegöl, around Hamidabat village, road edge, 940 m, 30.5.1999, ANES 6636-6638, H., Cosm.

***Taeniatherum caput-medusae* (L.) Nevski subsp. *asper* (Simonk.) Melderis**

A2 Bursa: İnegöl, around Kurşunlu village, road edge, 400 m, 16.5.1999, ANES 6639, T., Cosm.

Bromus hordeaceus* L. subsp. *hordeaceus

A2 Bilecik: Pazaryeri, around Küçükemalı village, north slopes 850-900 m, 30.5.1999, ANES 6641, T.

Bromus japonicus* Thunb. subsp. *japonicus

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 2 km, north slopes, 875 m, 4.7.1999, ANES 6643-6644, T., Cosm.

***Bromus squarrosus* L.**

B2 Bursa: İnegöl, around Hamidabat village, road edge, 940 m, 30.5.1999, ANES 6645, T. Cosm.

***Bromus tectorum* L.**

A2 Bursa: İnegöl, around Kurşunlu village, road edge, 400 m, 16.5.1999, ANES 6646-6649, T., Cosm.

***Bromus sterilis* L.**

A2 Bilecik: Pazaryeri, around Nazıfpaşa village, south slopes, 950 m, 13.6.1999, ANES 6650-6651, T., Cosm.

*** *Bromus rubens* L.**

A2 Bilecik: Pazaryeri, around Gümüşdere village, Hanyeri sırtı, north slopes, 850-900 m, 30.5.1999, ANES 6652-6655, T., Nr.

*** *Avena wiestii* Steud.**

B2 Bilecik: Bozüyük-Bilecik road, the turn to Pazaryeri village, south slopes, 640-670 m, 14.5.2000, ANES 6656, T., Nr.

***Avena fatua* L. var. *glabrata* Peterm.**

A2 Bilecik: Pazaryeri, between Gümüşdere and Bahçesultan villages, 2 km, south slopes, 850 m, 18.7.1999, ANES 6657, T., Euro-Sib. el.

***Avena sativa* L.**

A2 Bilecik: Pazaryeri, between Bahçesultan and Nazıfpaşa villages, 2 km, south slopes, 950 m, 13.6.1999, ANES 6658, T., Cultivated.

***Ventenata dubia* (Leers) Coss.**

A2 Bilecik: Pazaryeri, between Bahçesultan and Nazıfpaşa villages, 2 km, south slopes, 950 m, 13.6.1999, ANES 6659, H.

***Koeleria cristata* (L.) Pers.**

A2 Bilecik: Pazaryeri, around Gümüşdere village, northwest slopes, 890 m, 13.6.1999, ANES 6660-6661, H., Cosm.

***Holcus lanatus* L.**

A2 Bilecik: Pazaryeri, around Küçükemalı village, road edge, 850 m, 15.8.1999, ANES 6662, H., Euro-Sib. el.

***Apera spica-venti* (L.) P. Beauv.**

A2 Bilecik: Pazaryeri, around Gümüşdere village, south slopes, 820 m, 15.8.1999, ANES 6663-6664, H., Euro-Sib. el.

***Alopecurus arundinaceus* Poir.**

B2 Bilecik: Bozüyük-Bilecik road, the turn to Pazaryeri village, south slopes, 640-670 m, 14.5.2000, ANES 6665, G., Euro-Sib. el.

***Phleum phleoides* (L.) H.Karst.**

A2 Bilecik: Pazaryeri, around Gümüşdere vil-
lage, south slopes, 820 m, 18.7.1999, ANES 6666-
6667, H., Euro-Sib. el.

Festuca callieri (M. Hack. ex St.-Yves) F. Markgr.
subsp. ***callieri***

A2 Bilecik: Pazaryeri, around Gümüşdere vil-
lage, Hanyeri sırtı, north slopes, 850-900 m,
30.5.1999, ANES 6668-6712, H., Cosm.

Lolium perenne L.

A2 Bilecik: Pazaryeri, around Gümüşdere vil-
lage, Hanyeri sırtı, north slopes, 850-900 m,
30.5.1999, ANES 6713-6714, H., Euro-Sib. el.

Poa trivialis L.

A2 Bursa: İnegöl, around Kurşunlu village, road
edge, 400 m, 16.5.1999, ANES 6715-6716, H., Cosm.

Poa pratensis L.

A2 Bilecik: Pazaryeri, around Gümüşdere vil-
lage, Hanyeri sırtı, north slopes, 850-900 m,
30.5.1999, ANES 6717-6718, G., Cosm.

Poa nemoralis L.

A2 Bilecik: Pazaryeri, around Gümüşdere vil-
lage, north slopes, 870-910 m, 19.9.1999, ANES 6719,
H., Cosm.

Poa bulbosa L.

A2 Bilecik: Pazaryeri, between Gümüşdere and
Bahçesultan villages, 3 km, Devciyolu place, north
slopes, near Gümüş stream, 890 m, 16.5.1999, ANES
6720-6721, H., Cosm.

Dactylis glomerata L. subsp. ***glomerata***

B2 Bursa: İnegöl, around Hamidabat village,
road edge, 940 m, 30.5.1999; ANES 6722-6724, H.,
Euro-Sib. el.

Cynosurus cristatus L.

A2 Bilecik: Pazaryeri, around Gümüşdere vil-
lage, northwest slopes, 890 m, 13.6.1999, ANES 6725-
6727, T., Euro-Sib. el.

Cynosurus echinatus L.

A2 Bilecik: Pazaryeri, between Bahçesultan and
Nazıfpaşa villages, 2 km, south slopes, 950 m,
13.6.1999, ANES 6726, H., Medit. el.

* ***Melica uniflora*** Retz.

B2 Bursa: İnegöl, around Hamidabat village,
road edge, 940 m, 30.5.1999, ANES 6728, H., Nr., Eu-
ro-Sib. el.

Echinochloa crus-galli (L.) P. Beauv.

A2 Bilecik: Pazaryeri, around Küçükmalı vil-
lage, road edge, 850 m, 15.8.1999, ANES 6729, H.

Digitaria sanguinalis (L.) Scop.

A2 Bilecik: Pazaryeri, around Gümüşdere vil-
lage, north slopes, 870-910 m, 19.9.1999, ANES 6730,
H.

Zea mays L.

A2 Bilecik: Pazaryeri, between Gümüşdere
and Bahçesultan villages, 4 km, Around road repair
station, field edge, 920 m, 4.7.1999, ANES 6731-6732,
T., Cultivated.